IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

AMERICAN PATENT DEVELOPMENT CORPORATION LLC,	§ § §	
Plaintiff,	§ §	
v.	§ §	Civil Action No. 07-605 JJF
MOVIELINK, LLC,	§ § §	
Defendant.	§	

DEFENDANT MOVIELINK, LLC'S OPENING CLAIM CONSTRUCTION BRIEF

OF COUNSEL:

Scott W. Breedlove
David Tobin
Andrew Jackson
Vinson & Elkins LLP
Trammel Crow Center
2001 Ross Avenue, Suite 3700
Dallas, TX 75201-2975
214-220-7700

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Jeffrey L. Moyer (#3309)
moyer@rlf.com
Richards, Layton & Finger, P.A.
One Rodney Square
920 N. King Street
Wilmington, DE 19801
302-651-7700
Attorneys for Defendant Movielink, LLC

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DEFENDANT MOVIELINK, LLC'S OPENING CLAIM CONSTRUCTION BRIEF

Defendant Movielink, LLC ("Movielink" or "Defendant") submits this claim construction brief for U.S. Patent No. 5,400,402 ("the '402 Patent"). A Markman Hearing is currently scheduled for October 2, 2008.

I.   INTRODUCTION

American Patent Development Corporation, LLC ("APDC") brought this lawsuit accusing Movielink of infringing independent claims 1 and 2 of the '402 Patent, attached hereto as Ex. A. The '402 Patent is entitled "SYSTEM FOR LIMITING USE OF DOWN-LOADED VIDEO-ON-DEMAND DATA," and it is based on a patent application which was filed in June of 1993 by Norton Garfinkle. The underlying technology of the '402 Patent relates to video-on-demand—specifically, limiting customer access to downloaded video products. The prosecution history is short. In it, Garfinkle canceled all eight of his original claims; proffered exactly three replacement claims, each of which requires a "digital data stream" to include *both* a video product *and* related limiting instructions; and distinguished prior art on the basis of this requirement.

The disputed claim terms, and Movielink's proposed definitions for them, are set forth below:

DISPUTED TERM	MOVIELINK'S PROPOSED DEFINITION
a central station	a station in a single location, remote from the user site, where video products (such as movies and video games) and data used to limit viewing of the video products are stored electronically
a digital data stream comprising said video product, and data establishing a limit for authorized viewing of said video product	data transmitted from the central station to the user site as a single, continuous stream of digital data that includes both the video product and the data establishing a limit for authorized viewing of the video product
decoding said data establishing	at the user site, extracting the data establishing a limit for

DISPUTED TERM	MOVIELINK'S PROPOSED DEFINITION
a limit for authorized viewing of said video product	authorized viewing of the video product from the down-loaded digital data stream in order to separate the data establishing the authorized viewing limit from the video product
storing a result of said decoding step	Storing at the user site the extracted data
a digital data stream comprising said video product, data establishing a time period during which viewing of said video product is authorized	data transmitted from the central station to the user site as a single, continuous stream of digital data that includes both the video product and the data establishing a time period during which viewing of the video product is authorized
decoding said data establishing a time period during which viewing of said video product is authorized	at the user site, extracting the data establishing a time period during which viewing of the video product is authorized from the down-loaded digital data stream in order to separate the data establishing the time period from the video product
comparing an output of a local clock signal generator with said result of said decoding step	comparing the output of a time-of-day clock generator at the user site
erasing said video product	at the user site, deleting the video product from memory entirely; this does not include scrambling or other methods of limiting access to the video product

Movielink's proposed claim constructions are based on the plain meaning of these terms supplied by the abundant intrinsic evidence and further supported by extrinsic evidence, in accordance with well-established Federal Circuit case law.

II.   STATEMENT OF FACTS

A.   Overview of the '402 Technology

The specification of the '402 Patent generally relates to limiting a customer's access to downloaded video-on-demand products. '402 Patent at 2:14–37 (Summary of the Invention). Video products (movies, for example) are stored at a central station and, when a customer places an order, a central station transmits the video product to the customer together with instructions specifying limitations on the use of the video product (limiting instructions or limiting data). *See id.* at 2:62–3:1. These limiting instructions "can be encoded at the central station in instructions

that accompany the down-loaded data," *id* at 3:34–37, and they take the form of "a time limit mode or access limit mode or a combination of both modes." *Id* at 3:52–53. The time limit mode "limits the user to a prescribed time period (e.g., 24 hours) within which the user can view the stored program . . . as many times as desired." *Id* at 3:28–31. The access limit mode limits the user to a "fixed predetermined number of accesses (e.g., one)." *Id* at 3:47–48.

Once the central station transmits a digital data stream including the video product along with the encoded limiting instructions to the user site, the video product is stored at the user site. *Id* at 3:20–21, 4:59–62 & 5:4–7. The limiting instructions are extracted from the digital data stream in a decoding step, and the results of the decoding step are stored at the user site. *Id* at 3:58–61, 4:65 & 5:10. After the use limitations have been exceeded, a control unit, located at the customer site, "erases or otherwise . . . limits access to the stored data." *Id* at 3:22–26.

B.   Patent Prosecution for the Alleged "Invention" and Disavowal of Claim Scope

All claims of the '402 Patent are method claims. These claims are nothing more than ideas recorded into a patent application by Norton Garfinkle and his patent counsel. The record indicates that Garfinkle apparently had no notes of his "invention," and he neither performed the claimed methods nor built any system to implement the methods. Moreover, Garfinkle did not have the ability to implement the methods himself as he lacks the necessary background or training.[1] Movielink has provided detailed disclosure of prior art demonstrating that others actually developed such a system long before Garfinkle thought of it or had his lawyer write it into a patent application.

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[1] *See* Norton Garfinkle's Dep. 31:3–14, 35:11–24, 36:21–37:10, 41:22–42:3, 136:15–18, 162:6–163:4, 163:24–164:8, 166:13–19 (Aug. 14, 2008), attached hereto as Ex. B.

The originally filed patent application contained eight claims, three of which were independent claims. *See* Original Claims, attached hereto as Ex. C. Among the eight claims, only claims 5 and 6 (each of which depended from claim 1) stated as a limitation "the presence of the user access data in video data." Office Action at 4 (signed Apr. 29, 1994), attached hereto as Ex. D. In the Office Action signed April 29, 1994 the United States Patent Examiner rejected all eight of the originally filed claims. Two of the claims were rejected under 35 U.S.C. § 102(b) as being anticipated by a reference referred to as the "Hyatt Patent,"[2] a copy of which is attached hereto as Ex. E. One claim was rejected as anticipated by a reference referred to as the "Morales Patent,"[3] a copy of which is attached hereto as Ex. F. The remaining claims, including claims 5 and 6, were rejected under 35 U.S.C. § 103 as obvious over the Hyatt and Morales Patents. Office Action at 2–5.

Garfinkle responded to this rejection on August 5, 1994 by canceling the original eight claims and substituting three new claims. *See* Resp. to Office Action (Aug. 5, 1994), attached hereto as Ex. G. One major difference between the canceled claims and the new claims was that the new claims—all three of them—required the digital data stream to include *both* the video product *and* the limiting instructions. By narrowly amending his claims and then arguing in favor of the amendment in order to overcome prior art, Garfinkle clearly and unmistakably disclaimed the broad scope he had initially sought with his original claims. The litany of disclaimers is further detailed throughout the brief below.

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[2] The "Hyatt Patent" is U.S. Patent No 4,358,672. It issued on November 9, 1982 and names as inventors Robert K. Hyatt and Robert F. Jacobs.

[3] The "Morales Patent" is U.S. Patent No. 5,291,554. It issued on March 1, 1994 and name Fernando Morales as the inventor.

C.   Garfinkle's Lawsuit

Garfinkle has always had control of his '402 patent, even as he has transferred it from one non-operational company to the next.[4] He caused his latest company, APDC, to file this lawsuit accusing Movielink's movie download service of infringement almost five years after Movielink began the service—in a highly publicized November 2002 launch.   Perhaps coincidentally, perhaps not, APDC's lawsuit came less than two months after Blockbuster Inc. closed on its acquisition of Movielink in a deal that had been rumored in the press (and later confirmed) since 2006.[5]

From its opening pleading, Movielink has pointed out that the '402 Patent claims require that the limiting instructions must be part of the same "digital data stream" as the video product. *See* Def. Movielink, LLC's Answer and Countercls. to Pl.'s Compl. for Patent Infringement ¶ 11. Rather than admit the obvious, APDC answered that it was "without knowledge or information sufficient to form a belief as to the truth of these allegations"—even though "these allegations" were about APDC's own '402 patent. *See* Answer to Countercls. ¶ 11.

The question remains how Garfinkle and APDC could have had a good-faith "belief" that Movielink's service infringed when they supposedly didn't have any "belief" about the most pronounced characteristic, which Garfinkle had emphasized repeatedly to the United States Patent Examiner during patent prosecution, of each one of the asserted patent claims. *Cf. Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 730–31 (2002) (regarding the

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[4] "In any of those cases, the patent was always under my primary control in any of those related 6 structures." Norton Garfinkle's Dep. 71:7–9 (Aug. 14, 2008). "Q. Ultimately, though, did you have control of the '402 patent? A. I did, at all times." *Id.* at 89:22–24.

[5] Blockbuster closed its acquisition of Movielink on August 8, 2007 and this lawsuit was filed on October 2, 2007.

doctrine of prosecution history estoppel, stating that a "patent holder should know what he owns, and the public should know what he does not").

III. LEGAL FRAMEWORK OF CLAIM CONSTRUCTION

Before any accused product or process can be said to infringe a patent's claims, those claims must be construed to determine the precise meaning of the language used in the claims and the proper scope of the claims. Claim construction is a matter of law. *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 979 (Fed. Cir. 1995), *aff'd*, 517 U.S. 370 (1996).

It is a bedrock canon of claim construction that a claim term is generally given its ordinary and customary meaning as understood by a person of ordinary skill in the art at the time of the invention. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (en banc), *cert. denied*, 546 U.S. 1170 (2006). As explained in *Phillips*, the "ordinary meaning of a claim term is its meaning to the ordinary artisan after reading the entire patent." *Id.* at 1321. This ordinary meaning is determined by consulting the intrinsic record, which includes the claim language itself, the specification, and the prosecution history. *See id.* at 1314. That intrinsic record is the record which provides notice to the public about the scope of the invention. *Id.* at 1314 ("[T]he court looks to those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean." (internal quotations and citations omitted)). This public-notice function is critical:

> Ascertaining the meaning of the claims requires that they be viewed in the context of those sources available to the public that show what a person of skill in the art would have understood disputed claim language to mean. . . . The words of patent claims have the meaning and scope with which they are used in the specification and the prosecution history.

MBO Labs., Inc. v. Becton, Dickinson & Co., 474 F.3d 1323, 1329 (Fed. Cir. 2007) (citing several Federal Circuit cases including *Phillips*, 415 F.3d at 1303–1317) (internal citations and

quotations omitted); *Microprocessor Enhancement Corp. v. Tex. Instruments Inc.*, 520 F.3d 1367, 1378 (Fed. Cir. 2008) (*"Phillips* teaches that these sources should be accorded relative weights[,] with intrinsic sources being the most relevant.") (citing *Phillips*, 415 F.3d at 1314–19).

The proper starting point in claim construction is the language of the claim itself since "the claims themselves provide substantial guidance as to the meaning of particular claim terms." *Phillips*, 415 F.3d at 1314. A court also reads the claim in the context in which individual terms appear because "the correct meaning of a word or phrase is informed only by considering the surrounding text." *Brookhill-Wilk 1, LLC v. Intuitive Surgical, Inc.*, 326 F.3d 1215, 1221 (Fed. Cir. 2003); *see also Phillips*, 415 F.3d at 1314 (stating that "the context of the surrounding words of the claim also must be considered in determining the ordinary and customary meaning of those terms" (quoting *ACTV, Inc. v. Walt Disney Co.*, 346 F.3d 1082, 1088 (Fed. Cir. 2003)).

The court should also examine the patent specification. *See Markman*, 52 F.3d at 979 ("Claims must be read in view of the specification, of which they are a part."). The specification "is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." *Phillips*, 415 F.3d at 1315 (citations omitted). While limitations are generally not imported from the specification into the claims, it is "entirely permissible and proper" to limit the claims in accordance with the specification if the specification "read as a whole suggests that the very character of the invention requires the limitation be a part of every embodiment." *Alloc, Inc. v. Int'l Trade Comm'n*, 342 F.3d 1361, 1368–70 (Fed. Cir. 2003).

In addition to the claims and the specification, the prosecution history "of proceedings in the Patent and Trademark Office is of primary significance in understanding the claims."

Markman, 52 F.3d at 980. In general, the prosecution history and the patent are more reliable

sources of evidence than any extrinsic evidence. *Phillips*, 415 F.3d at 1318. The intrinsic

evidence may reveal a disclaimer or abandonment of claim scope by the patentee:

> When the specification makes clear that the invention does not include a particular feature, that feature is deemed to be outside the reach of the claims of the patent, even though the language of the claims, read without reference to the specification, might be considered broad enough to encompass the feature in question. . . . A patentee may also limit the scope of the claims by disclaiming a particular interpretation during prosecution.

Microsoft Corp. v. Multi-Tech Sys., Inc., 357 F.3d 1340, 1347 (Fed. Cir. 2004) (internal

quotations omitted); *see SciMed Life Sys., Inc. v. Advanced Cardiovascular Sys.*, Inc., 242 F.3d

1337, 1340–43 (Fed. Cir. 2001); *Watts v. XL Sys., Inc.*, 232 F.3d 877, 882–83 (Fed. Cir. 2000);

Toro Co. v. White Consol. Indus., Inc., 199 F.3d 1295, 1301 (Fed. Cir. 1999). This doctrine,

known as "prosecution disclaimer," serves to "protect[] the public's reliance on definitive

statements made during prosecution by precluding patentees from recapturing through claim

interpretation specific meanings clearly and unmistakably disclaimed during prosecution."

Computer Docking Station Corp. v. Dell, Inc., 519 F.3d 1366, 1374–75 (Fed. Cir. 2008) (internal

citations and quotations omitted). In short, "[c]laims should not be construed one way in order to

obtain their allowance and in a different way against accused infringers." *Id.*

After reviewing the intrinsic evidence, the Court may also consider extrinsic evidence

such as expert testimony and dictionaries. *See Phillips*, 415 F.3d at 1319–24. This "extrinsic

evidence may be useful to the court[, but] it is unlikely to result in a reliable interpretation of

patent claim scope unless considered in the context of the intrinsic evidence." *Id.* at 1319.

Although extrinsic evidence may help further the Court's understanding of the patent, it may not

be used "for the purpose of varying or contradicting the terms of the claims." *Markman*, 52 F.3d

at 981. Moreover, when the intrinsic evidence is clear, there should be no need to look to

extrinsic evidence to interpret the claims. *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1583 (Fed. Cir. 1996). The Federal Circuit explained that reliance on dictionary definitions at the expense of the specification has the effect of "focus[ing] the inquiry on the abstract meaning of words rather than on the meaning of the claim terms within the context of the patent." *Phillips*, 415 F.3d at 1321. Therefore, the Court cautioned against overuse of dictionary definitions, as their use "risks transforming the meaning of the claim term to the artisan into the meaning of the term in the abstract, out of its particular context, which is the specification." *Id.*

IV. ARGUMENT

The '402 Patent contains three claims, each of which is an independent claim. Among them, only claims 1 and 2 have been asserted in this litigation. The claim terms of the '402 Patent requiring construction are indicated in bold font below where they first appear in the claims:

Claim 1

1. A method for providing a video product from a **central station** to a user site, comprising the steps of:

transmitting from said central station to said user site **a digital data stream comprising said video product, and data establishing a limit for authorized viewing of said video product;**

storing said video product at said user site;

decoding said data establishing a limit for authorized viewing of said video product;

storing a result of said decoding step;

blocking access to said video product stored at said user site if said limit for authorized viewing is exceeded.

Claim 2

2. A method for providing a video product from a **central station** to a user site, comprising the steps of:

transmitting from said central station to said user site **a digital data stream comprising said video product, data establishing a time period during which viewing of said video product is authorized**;

storing said video product at said user site;

decoding said data establishing a time period during which viewing of said video product is authorized;

storing a result of said decoding step;

comparing an output of a local clock signal generator with said result of said decoding step; p1 [sic] **erasing said video product** stored at said user site if the result of said comparing step is that the time period during which viewing of said video product is authorized has expired.

Garfinkle obtained his patent, on methods that neither he nor anyone on his behalf has ever implemented, by replacing his original claims with new claims restricted in one crucial respect: the limiting instructions are transferred to the user site as part of the same downloaded digital data stream that contains the video product. In addition to amending the claims, Garfinkle argued the patentability of his invention over the prior art by emphasizing the added limitation. This section will first discuss the requirement of the digital data stream because, by restricting the scope of his new claims and making his accompanying arguments, Garfinkle informed the public of what his alleged invention did and did not include. The construction of many of the other elements flows logically from this clear disclaimer.

A.   **"a digital data stream comprising said video product, and data establishing a limit for authorized viewing of said video product" (Claim 1)**

Defendant's Proposed Construction
"data transmitted from the central station to the user site as a single, continuous stream of digital data that includes both the video product and the data establishing a limit for authorized viewing of the video product"

1.   **Intrinsic evidence mandates Defendant's construction, particularly in light of Garfinkle's clear disavowal of claim scope made during patent prosecution.**

The claim itself is clear that the digital data includes both the video product and the data establishing a limit for authorized viewing of the video product. Moreover, the specification states, "The time limit, or the prescribed number of times, can be encoded at the central station *in instructions that accompany* the down-loaded data." '402 Patent at 3:34–36 (emphasis added).

A disavowal of claim scope made during patent prosecution reinforces this construction.[6] When the United States Patent Office ("USPTO") Examiner rejected the original claims entirely, Garfinkle was forced to cancel the claims and proffer a completely new set of claims, thereby restricting the scope of his alleged invention to overcome prior art references cited by the Examiner. This new set of claims incorporated "the presence of the user access data in video data" into independent claim form, rather than as a dependent claim.[7] *Compare* '402 Patent at 4:58–61 *and* 5:3–6 *with* Original Claims. The Supreme Court established long ago:

> Where the patentee in the course of his application in the patent office has, by amendment, canceled or surrendered claims, those which are allowed are to be read in light of those abandoned and an abandoned claim cannot be revived and restored to the patent by reading it by construction into the claims which are allowed.

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[6] "Like the specification, the prosecution history provides evidence of how the PTO [Patent and Trademark Office] and the inventor understood the patent." *Phillips v AWH Corp*, 415 F.3d 1303, 1317 (Fed. Cir. 2005) (en banc), *cert denied*, 546 U.S. 1170 (2006) (citations omitted). "[T]he prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." *Id* at 1317. The *Phillips* court continued to explain that "[t]he purpose of consulting the prosecution history in construing a claim is to exclude any interpretation that was disclaimed during prosecution." *Id* (internal citations and quotations omitted); *see Computer Docking Station Corp v Dell, Inc*, 519 F.3d 1366, 1374 (Fed. Cir. 2008) (discussing cases in which patentees "limit the meaning of a claim term by making a clear and unmistakable disavowal of scope during prosecution.")

[7] Among the original claims, only claims 5 and 6 (each of which depended from claim 1) included as a limitation "the presence of the user access data in video data." Office Action at 2–5

Schriber-Schroth Co. v. Cleveland Trust Co., 311 U.S. 211, 217–18 (1940) (using the prosecution history to preclude an interpretation of claims as covering a flexible web where patentee amended certain claims in the application to cover a "resiliently yieldable" web and then after receiving a rejection from the patent office, canceled these claims). The Supreme Court further has further explained:

> Claims as allowed must be read and interpreted with reference to rejected ones and to the state of the prior art; and claims that have been narrowed in order to obtain the issuance of a patent by distinguishing prior art cannot be sustained to cover that which was previously by limitation eliminated from the patent.

Graham v. John Deere Co. of Kansas City, 383 U.S. 1, 33 (1966); *see Research Plastics, Inc. v. Fed. Packaging Corp.*, 421 F.3d 1290, 1297 (Fed. Cir. 2005).

Garfinkle attempted to overcome the Examiner's rejections and distinguish prior art by explaining what his alleged invention covered:

> Applicant's invention relates to a video-on-demand system in which the video product ordered by a user is down-loaded as a digital data stream . . . . In accordance with applicant's invention, the user's access to the video product stored at the user site is limited in accordance with data that is transferred concomitantly *as part of* the down-loaded digital data stream.

Resp. to Office Action at 3–4 (emphasis added).

> Independent claims 9, 10 and 11 [issued as claims 1, 2 and 3, respectively] specifically point out that the time limiting data is transferred to the user site *as part of* the down-loaded data stream that includes the video product. Neither of the references of record teach or suggest down-loading the limiting data *as part of* the video *stream*.

Id. at 6 (emphasis added).

> There is no teaching or suggestion in Morales of . . . transmitting the authorizing data *as part of* the down-loaded video data.

Id. at 5 (emphasis added).

> Morales . . . does not teach or suggest . . . that limiting data should be down-loaded *as part of* the video data *stream*.

Id. at 6 (emphasis added).

Garfinkle disavowed the overly broad scope of his original claims by "clearly characterizing the invention in a way to try to overcome rejections based on prior art." *See Computer Docking Station*, 519 F.3d at 1374; *Gillespie v. Dywidag Sys. Int'l, USA*, 501 F.3d 1285, 1290–91 (Fed. Cir. 2007) (using prosecution history to construe claims based upon patentee distinguishing its claims from prior art); *Andersen Corp. v. Fiber Composites, LLC*, 474 F.3d 1361, 1373–74 (Fed. Cir. 2007) (same); *MBO Labs., Inc. v. Becton, Dickinson & Co.*, 474 F.3d 1323, 1330 (Fed. Cir. 2007) ("Prosecution arguments . . . which draw distinctions between the patented invention and the prior art are useful for determining whether the patentee intended to surrender territory, since they indicate in the inventor's own words what the invention is not."). Furthermore, the law is clear that the proper construction of any claim term must "exclude any interpretation that was disclaimed during prosecution." *Phillips*, 415 F.3d at 1317 (citations omitted); *see Norian Corp. v. Stryker Corp.*, 432 F.3d 1356, 1361–62 (Fed. Cir. 2005) (discussing that narrow claim constructions, when premised on a surrender of claim scope made by the applicant during prosecution, apply even if the surrender was not necessary to distinguish over prior art, because the public has a right to rely on an unambiguous surrender of claim scope evident in the prosecution history).

By distinguishing the prior art, Garfinkle has excluded any interpretation wherein the video product and limiting instructions could be transmitted separately. Indeed, the prosecution history is very short, and no point was emphasized more emphatically or consistently than this restriction requiring the video product and limiting instructions to be transmitted together. Defendant's proposed construction properly accounts for Garfinkle's own representations to the USPTO.

2.   Extrinsic evidence further supports Defendant's construction.

Garfinkle's unequivocal disclaimer is supported by extrinsic evidence, as well—specifically, the definition of the claim term "data stream" in a technical dictionary.[8] The term "data stream" is defined as "the *continuous* transmission of data from *one location to another.*" *McGraw-Hill Dictionary of Scientific and Technical Terms* (6th Ed. 2003) (emphasis added), attached hereto as Ex. H. This technical dictionary definition is consistent with the alleged invention as described in the '402 Patent specification. As discussed below in Section IV.B with respect to the "central station" element, "a customer who wants to view a particular video program . . . will contact a central station and request a program, which will be down-loaded." '402 Patent at 1:14–18. The central station is "one location," and the data—both the video product and the limiting instructions together—must be continuously transmitted ("down-loaded") to the customer site, which is "another" location.

B.   "a central station" (Claims 1 and 2)

Defendant's Proposed Construction
"a station in a single location, remote from the user site, where video products (such as movies and video games) and data used to limit viewing of the video products are stored electronically"

The specification repeatedly recites the elements of Defendant's construction and provides ample evidence of what the patentee regards as the invention.

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[8] The *Phillips* court explained regarding the use of technical dictionaries:

> "Because dictionaries, and especially technical dictionaries, endeavor to collect the accepted meanings of terms used in various fields of science and technology, those resources have been properly recognized as among the many tools that can assist the court in determining the meaning of particular terminology to those of skill in the art of the invention . . . Such evidence, we have held, may be considered if the court deems it helpful in determining the true meaning of language used in the patent claims."

Phillips, 415 F.3d at 1318 (internal citations and quotations omitted).

1.   The central station is "remote" from the user site.

The central station must be remote from the user site: "A customer site, indicated within the dashed block 10, is connected by a high-speed data link 12 *to a remote central station* 14." '402 Patent at 2:56–59 (emphasis added). The specification discloses that the converse is also true, namely, that the user site is remote from the central station. *See id.* at 2:66–3:1.

2.   The central station is in a single location and is where the video products and the limiting instructions are stored electronically.

The patent as a whole confirms that the central station is a single station in a single location. In describing the prior art, the specification states that in certain video-on-demand systems, "a customer who wants to view a particular video program . . . will contact *a central station* and request a program, which will be down-loaded." '402 Patent at 1:14–18 (emphasis added). In addition, "The time limit, or the prescribed number of times, can be encoded at *the central station* in instructions that accompany the down-loaded data." *Id.* at 3:34–36 (emphasis added). Furthermore, the central station is graphically depicted as being in a single location. *See* '402 Patent at Figs. 1 & 2.

FIG. 1
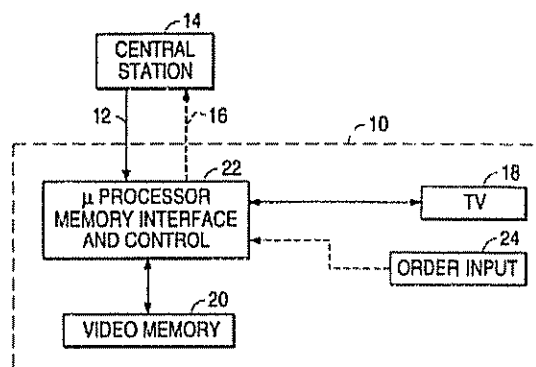
FIG. 2
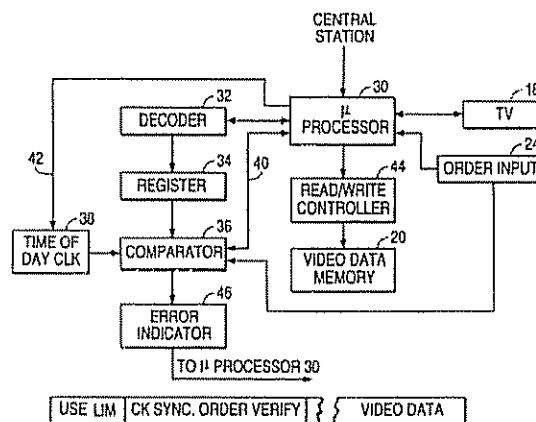
As elaborated above in Section IV.A, the video product and limiting data are transmitted from the central station as part of the same down-loaded digital data stream. It follows that if the video product and limiting data are transmitted together as part of the same data stream, then they must be transmitted from the same single location.

In addition to intrinsic evidence, extrinsic evidence also supports the construction that the central station is a single station. The claims recite the step of "*transmitting* from said central station to said user site a digital data stream." The definition of "transmit" is to "move data from *one location* to another." *McGraw-Hill Dictionary of Scientific and Technical Terms* (6th Ed. 2003). The central station must therefore be in a single location.

C.   "decoding said data establishing a limit for authorized viewing of said video product" (Claim 1)

Defendant's Proposed Construction
"at the user site, extracting the data establishing a limit for authorized viewing of the video product from the down-loaded digital data stream in order to separate the data establishing the authorized viewing limit from the video product"

Prior to the decoding step, the data establishing a limit for authorized viewing is "encoded at the central station in instructions that accompany the down-loaded data." '402 Patent at 3:34–36. The decoder then "decodes the instructions specifying the use limitations in the down-loaded data." *Id.* at 3:59–61; *see id.* at Fig. 2 & 4:32–33 (stating that "the limit data is *decoded from* the down-loaded data stream" (emphasis added)). Furthermore, this claim term refers to "said data," which means that the element is referring to the "data" appearing in a previous element. *See Abtox, Inc. v. Exitron Corp.*, 122

FIG. 2
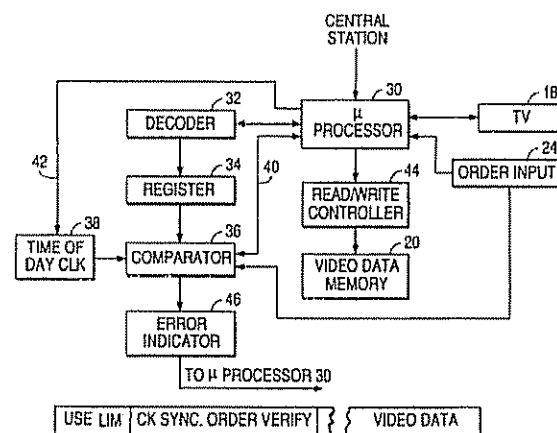
F.3d 1019, 1024 (Fed. Cir. 1997). Thus, "said data establishing a time period" refers to the data that was previously transmitted to the user site as part of the data stream including the video product. This "limit data is *decoded from* the down-loaded data stream." '402 Patent at 4:31–32 (emphasis added); *see also id.* at 4:17–19 ("[T]he order data may also be inputted to the comparator 36 and compared to order data also *encoded in* the down-loaded data from the central station." (emphasis added)). The data stream is down-loaded to the user site and comparator 36 is located at the user site. *See id.* at Figs. 1–2. Hence, the decoding takes place at the user site.

D.   "storing a result of said decoding step" (Claims 1 and 2)

Defendant's Proposed Construction
"storing at the user site the extracted data"

A plain reading of the claims supports Defendant's proposed construction. This claim element refers to "said decoding step," which means that this element is referring to the decoding step from a previous element. As described in section IV.C, the decoding step has taken place at the user site, so the storing also takes place at the user site. The decoding step yields limiting instructions that have been decoded, or extracted, from the data stream that contained the video product. Hence, storing a result of the decoding step means that this extracted data is stored.

The specification also supports Defendant's proposed construction. "The decoded limiting data is stored in a register 34. . . ." '402 Patent at 3:68–4:1. Register 34 is located at the user site. *See id.* at Figs. 1–2 (illustrating the output of the decoder 32 stored at the user site).

E. **"a digital data stream comprising said video product, data establishing a time period during which viewing of said video product is authorized" (Claim 2)**

Defendant's Proposed Construction
"data transmitted from the central station to the user site as a single, continuous stream of digital data that includes both the video product and the data establishing a time period during which viewing of the video product is authorized"

As support for Defendant's proposed construction, Defendant refers the Court to the arguments contained in section IV.A of this Brief, regarding the element "a digital data stream comprising said video product, and data establishing a limit for authorized viewing of said video product" in Claim 1.

F. **"decoding said data establishing a time period during which viewing of said video product is authorized" (Claim 2)**

Defendant's Proposed Construction
"at the user site, extracting the data establishing a time period during which viewing of the video product is authorized from the down-loaded digital data stream in order to separate the data establishing the time period from the video product"

As support for Defendant's proposed construction, Defendant refers the Court to the arguments contained in section IV.C of this Brief, regarding the element "decoding said data establishing a limit for authorized viewing of said video product" in Claim 1.

G. **"comparing an output of a local clock signal generator with said result of said decoding step" (Claim 2)**

Defendant's Proposed Construction
"comparing the output of a time-of-day clock generator at the user site with the result of the decoding step"

The '402 Patent specification supports Defendant's proposed construction that the comparison occurs at the user site and utilizes a time-of-day clock generator: "The output of the register 34 is coupled to an input of a comparator 36, whose other inputs include the output of a time-of-day clock generator 38 . . . ." '402 Patent at 4:5–8; *see* Fig. 2. The specification further

discloses, "In the case of a time limit, this comparison can be made with the time-of-day clock 38". *Id.* at 4:37–38. The "local clock signal generator" cannot be located at the central station but must instead be located at the user site, as the specification differentiates the "*local* time-of-day clock and the *central station* clock." *Id.* at 4:15–16 (emphasis added).

FIG. 2
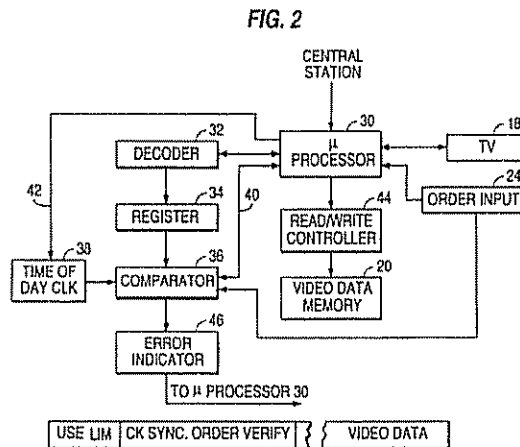
H.   "erasing said video product" (Claim 2)

Defendant's Proposed Construction
"at the user site, deleting the video product from memory entirely; this does not include scrambling or other methods of limiting access to the video product"

A plain reading of the claim dictates that the erasing step occurs at the user site. The video product is down-loaded to the user site and stored at the user site; so in order to limit the user's access to the video product, it must be erased from the user site.

Numerous references in the specification support Defendant's proposed construction that "erasing" means deleting entirely from memory, and "erasing" does not include scrambling or other methods of limiting access. First, the specification states that "[t]he control system *erases or scrambles* the stored program after it has been viewed." '402 Patent at 2:21–22 (emphasis added). This suggests that scrambling (or otherwise blocking access) is different than erasing.

Indeed, the patentee chose "erasing" in claim 2 rather than the "blocking access" terms used in claim 1—presumably for some reason.

Moreover, the specification states that "[c]ontrol unit 22 also erases *or otherwise (e.g., scrambles)* limits access to the stored data." *Id.* at 3:22–23 (emphasis added); *see id.* at 4:44–49. By using the word "otherwise," the specification distinguishes erasing from scrambling and other forms of limiting access. In contrast to the specification, claim 2 does not capture the broader language.

V. CONCLUSION

The short prosecution history could not be more emphatic that the claimed invention requires that the video product and limiting data must be transmitted together as part of the same digital data stream. The claims and specification as a whole likewise confirm this point. Each of Defendant's proposed claim term constructions is based on established Federal Circuit law, and Defendant respectfully urges this Court to adopt these constructions in there entirety.
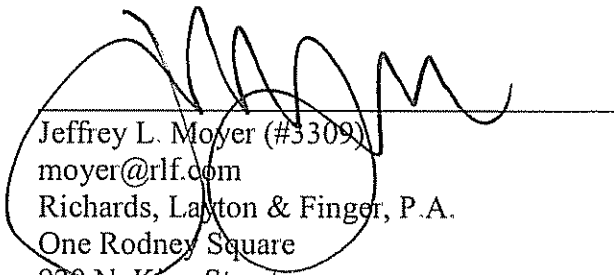
OF COUNSEL:
Scott W. Breedlove
David Tobin
Andrew Jackson
Vinson & Elkins LLP
Trammel Crow Center
2001 Ross Avenue, Suite 3700
Dallas, TX 75201-2975
214-220-7700

Jeffrey L. Moyer (#3309)
moyer@rlf.com
Richards, Layton & Finger, P.A.
One Rodney Square
920 N. King Street
Wilmington, DE 19801
302-651-7700
Attorneys for Defendant Movielink, LLC

Dated: August 28, 2008

UNITED STATES DISTRICT COURT
DISTRICT OF DELAWARE

CERTIFICATE OF SERVICE

I hereby certify that on August 28, 2008, I electronically filed the foregoing with the Clerk of Court using CM/ECF which will send notification of such filing(s) to the following and which has also been served as noted:

BY HAND DELIVERY:

Thad J. Bracegirdle
Reed Smith LLP
1201 Market Street
Wilmington, Delaware 19801

I hereby certify that on August 28, 2008, the foregoing document was sent to the following non-registered participants in the manner indicated:

BY FEDERAL EXPRESS:

Mark W. Wasserman
Matthew R. Sheldon
Reed Smith LLP
3110 Fairview Park Drive
Suite 1400
Falls Church, Virginia 22042
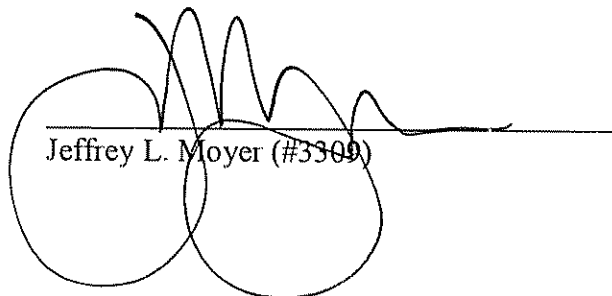
Jeffrey L. Moyer (#3309)

EXHIBIT A

US005400402A

United States Patent [19]

Garfinkle

[11] Patent Number: 5,400,402

[45] Date of Patent: Mar. 21, 1995

[54] **SYSTEM FOR LIMITING USE OF DOWN-LOADED VIDEO-ON-DEMAND DATA**

[76] Inventor: Norton Garfinkle, 2800 S. Ocean Blvd., Boca Raton, Fla. 33432

[21] Appl. No.: 72,927

[22] Filed: Jun. 7, 1993

[51] Int. Cl.⁶ H04N 7/167
[52] U.S. Cl. 380/20; 380/10; 380/5; 348/7
[58] Field of Search 380/10, 20, 5; 348/7, 348/10, 6

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,358,672	11/1982	Hyatt et al.	235/380
4,506,387	3/1985	Walter	455/612
4,593,337	6/1986	Leone et al.	360/137
4,890,320	12/1989	Monslow et al.	380/10
4,945,563	7/1990	Horton et al.	380/5
4,947,429	8/1990	Bestler et al.	380/20
5,046,090	9/1991	Walker et al.	380/5
5,051,822	9/1991	Rhoades	358/86
5,060,079	10/1991	Rufus-Isaacs	358/349
5,070,400	12/1991	Liberman	358/84
5,081,680	1/1992	Bennett	380/50
5,291,554	3/1994	Morales	380/5

Primary Examiner—David C. Cain
Attorney, Agent, or Firm—Lane, Aitken & McCann

[57] **ABSTRACT**

A digital data system that includes a control system at a customer site that blocks access to a down-loaded stored program after it has been viewed a predetermined number of times (e.g., once), or after a predetermined interval, or any combination thereof.

3 Claims, 2 Drawing Sheets
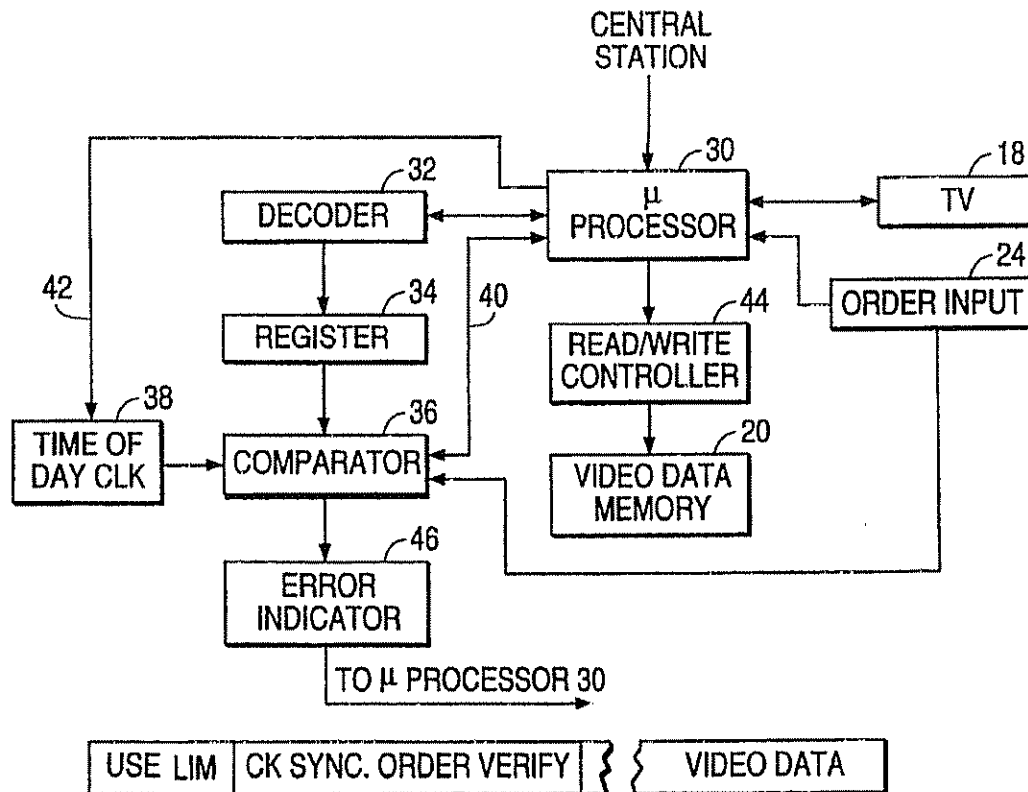
FIG. 1

FIG. 2

CENTRAL
STATION

DECODER 32

μ PROCESSOR 30

TV 18

REGISTER 34

40

42

ORDER INPUT 24

READ/WRITE CONTROLLER 44

TIME OF DAY CLK 38

COMPARATOR 36

VIDEO DATA MEMORY 20

ERROR INDICATOR 46

TO μ PROCESSOR 30

| USE LIM | CK SYNC. ORDER VERIFY | } | VIDEO DATA |

FIG. 3

DECODE LIMIT DATA 50

STORE LIMIT DATA 52

LIMIT REACHED 54

NO → ENABLE READ VIDEO DATA 56

YES → ERASE VIDEO DATA 58
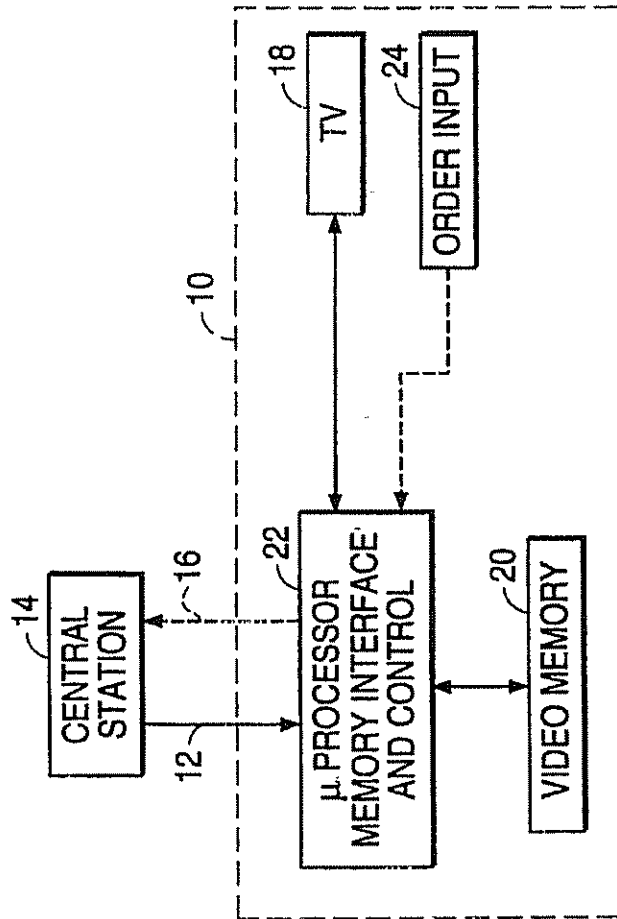
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SYSTEM FOR LIMITING USE OF DOWN-LOADED VIDEO-ON-DEMAND DATA

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates generally to video-on-demand systems, and more particularly to an improved system for controlling the use of video programs that have been down-loaded from a central station and stored at a customer's site.

2. Description of the Prior Art

There have been a number of proposals for so-called video-on-demand systems. In certain of these proposals, a customer who wants to view a particular video program (e.g., a movie, a video game, or printed text material) will contact a central station and request a program, which will be down-loaded, at high speed, and stored at the customer's site, for later viewing.

U.S. Pat. No. 4,506,387, which is incorporated herein by reference, discloses a programming-on-demand cable system which allows any one of a plurality of individual users to request anyone of a plurality of video programs they wish to view from a library of programs, and permits the requested program to be available for viewing on a conventional television set at the user's location following a request initiated by the user. Each program is preprogrammed in a memory device selectable by a host computer at a central data station in response to an address signal transmitted from the user. The host computer in conjunction with other electronics transmits the video program at a high non-real-time rate over a fiber optic line network to a data receiving station at the user's location. The data receiving station then converts the received optical data back to electrical data and stores it for subsequent real-time transmission to the user's television set. The system permits the user to view any one of a number of programs transmitted on a non-real-time basis, and also allows the user to store tile transmitted program at his data receiving station for an indefinite period of time for viewing at a later date. In this system, however, there is no provision to limit the use a customer may make of a down-loaded program.

U.S. Pat. No. 5,046,090, discloses a video system in which programs are down-loaded and stored. Video programs are rendered unintelligible, e.g. scrambled, by any analog or digital method, and are made intelligible, e.g., descrambled, using random digital codes located in fields. The random digital keys are themselves encrypted, and decrypted by a one or more key obtained from a database located at a remote central facility, along with user-specific information at the time of viewing. Obviously, this system is relatively complex and requires a data link to the remote central facility in order to obtain decryption data.

Similarly, U.S. Pat. No. 5,051,822, discloses a digital, interactive communication system designed to provide a plurality of remote subscribers with any one of a plurality of stored video games or like software packages through the use of a home computing assembly maintained within the subscriber's home and structured to display video as well as generating audio on a standard television receiver and further incorporating the ability to utilize contemporary video gaming control devices for subscriber program interaction. A bi-directional communication link is established over the telephone lines between the home computing assembly and the

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central remote game storage center wherein the software programs are transmitted as a modulated carrier to the subscriber. Program selection is controlled by a remote game storage center executive software program. Automatic billing is performed by computing equipment maintained in the remote game storage center and transmitted to a headquarters.

Thus, it will be appreciated that the prior art proposals for controlling down-loaded video data are complex and not altogether suitable for widespread commercial use.

SUMMARY OF THE INVENTION

An object of this invention is the provision of a relatively simple, inexpensive system to limit the use of a program stored at a customer site commensurate with a fee or other arrangement with the customer.

Briefly, the nature of this invention is the provision of a control system at the customer site that operates independently of the central station once the program has been down-loaded. In one embodiment, the control system erases or scrambles the stored program after it has been viewed a predetermined number of times 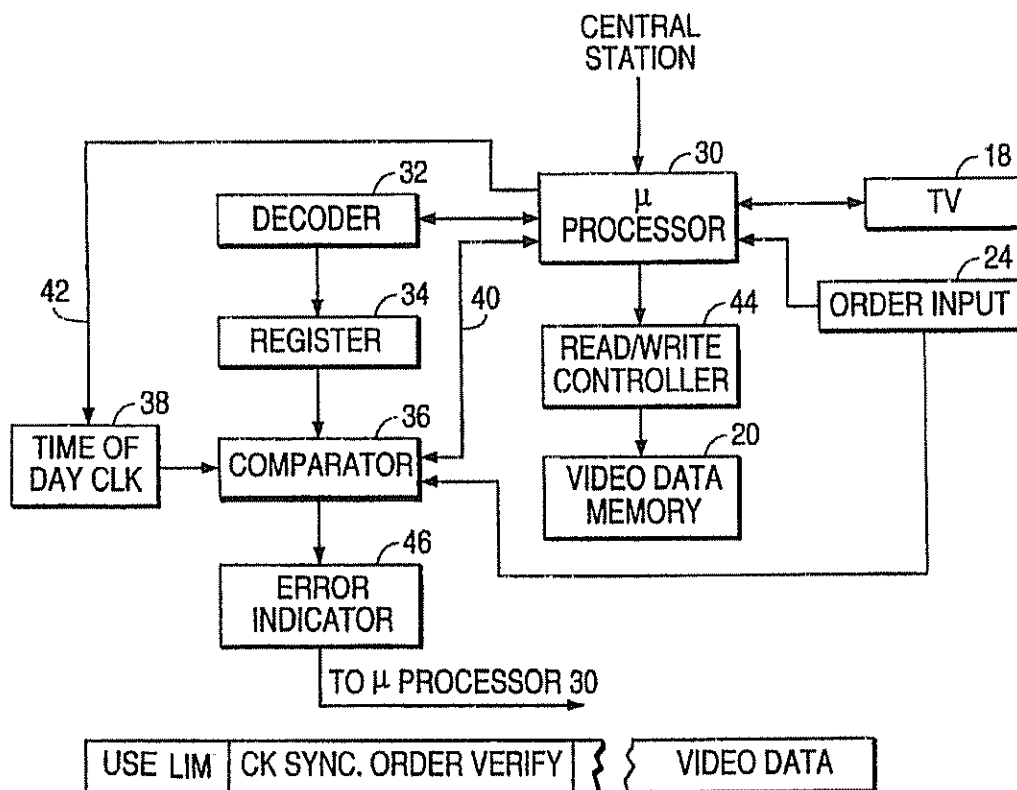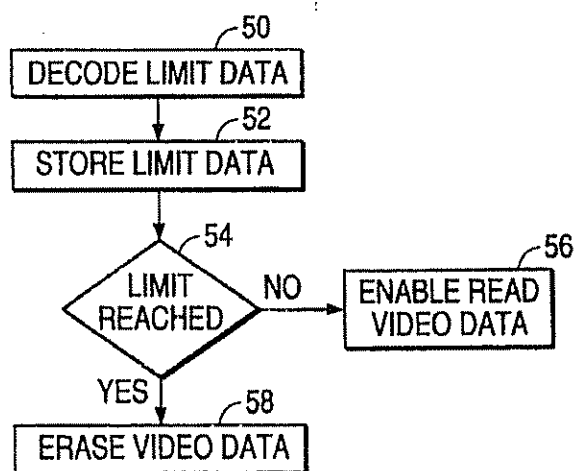(e.g., once), and in another embodiment the program is erased or scrambled after a predetermined interval (e.g., 24 hours). In one embodiment the stored program is erased after a predetermined interval or after a predetermined number of accesses or any combination thereof based on fixed criteria stored at the customer site. In another embodiment, the down-loaded data includes instructions that specify and controls the number of times the stored data may be accessed, or the period during which the stored material may be accessed, or any combination thereof. In each embodiment, a control system at the customer's site limits further access to the stored program after the limit has been reached.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other objects, aspects and advantages will be better understood from the following detailed description of a preferred embodiment of the invention with reference to the drawings, in which:

FIG. 1 is a block diagram of a video-on-demand system.

FIG. 2 is a block diagram of one embodiment of a system to limit access to stored programs in accordance with the invention.

FIG. 3 is a flow diagram of the process steps of the embodiment of FIG. 2.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT OF THE INVENTION

Referring now to FIG. 1 of the drawings, it illustrates a typical video-on-demand system with which the use control system of this invention is applicable. A customer site, indicated within the dashed block 10, is connected by a high-speed data link 12 to a remote central station 14. The high-speed data link may, for example, be a fiber optic, publically switched, telephone link, a satellite wireless link or a cable television link. Typically, the video data will be stored in digital form at the central station and at the customer site. Depending on the nature of link 12, data may be transmitted digitally on link 12 or in an analogue format using digital to analogue and analogue to digital converters. The link 12 serves to down-load, at high speed, a video program to a specific customer address from which an

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order has been placed from a remote customer site 10. A customer order, depending on the link 12, can be placed over link 12 from the remote site 10 via an order entry unit 24 through which an order may be placed using a keyed-in code. The advantage of such an order entry unit 24 is that it presents a standard order format to the central station 14. A separate link, here indicated by the dashed line 16, could also be used to place an order; the link 16 may be, for example, a standard, public voice telephone connection, in which case the order unit 24 would be a standard audio telephone set.

The remote customer site components include a television set 18 and a digital video memory 20 such as a hard disk memory, a FLASH memory, a tape memory, optical disk memory or other suitable memory for storing the down-load video data. A microprocessor-based memory interface and memory control unit 22 provides an interface between the link 12 and the memory 20. It loads the data into assigned memory address locations. It retrieves the stored digital video data, and converts it to an analogue signal for display on the television 18. Control unit 22 also erases or otherwise (e.g., scrambles) limits access to the stored data after a use limit specified by the central station or fixed at the customer site have been met or exceeded, as will be described in greater detail in connection with FIGS. 2 and 3.

Referring now to FIG. 2, in one embodiment of the invention the system limits the user to a prescribed time period (e.g., 24 hours) within which the user can view the stored program. During this period the user can access the stored program as many times as desired. In another embodiment of the invention, the system limits the user to a prescribed number of times that he is allowed to view the stored program. The time limit, or the prescribed number of times, can be encoded at the central station in instructions that accompany the down-loaded data. In this case, the period or the number of views may be specified when the customer orders the program. In one embodiment the period or number of views is fixed by the central station; in another embodiment the period or number of views may be specified by the customer when he orders the program.

It will be appreciated that, if desired, the limits may be combined; for example, the program may be viewed twice in a 12-hour period. Alternatively, the stored program can be erased after a predetermined interval (e.g., 24 hours) or fixed predetermined number of accesses (e.g., one) which is fixed by data permanently stored at the customer site or specified by instructions included with the downloaded data.

The embodiment of the invention shown in FIG. 2 is capable of operating in a time limit mode or access limit mode or a combination of both modes. If only a single limiting mode of operation is needed, the un-needed functionality described herein can be omitted from the system. As shown in FIG. 2, a down-loaded high-speed data stream from the central station is coupled to a suitable microprocessor 30. An output from the microprocessor 30 is coupled to decoder 32 that, in this embodiment, decodes the instructions specifying the use limitations in the down-loaded data. As will be appreciated by those skilled in the art, the function of decoding may be performed as a hardware operation as shown here, or as a programmed operation of the microprocessor 30. It will also be appreciated that limiting data may be permanently stored at the customer site, in which the down-loaded data need not include such user limitation data. The decoded limiting data is stored in a register

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34; in this embodiment of the invention it is assumed that both a time limit and a numerical access limit are coded in the instructions and stored in the register 34. However, it is contemplated that, in most applications of the invention, a time limit alone will be used. The output of the register 34 is coupled to an input of a comparator 36, whose other inputs include the output of a time-of-day clock generator 38, and count of the number of times video data at a certain address location has been accessed from microprocessor 30 over line 40. In a particular embodiment of the invention, the downloaded information from the central station includes time-of-day synchronizing data, which is used (as indicated by the connection 42) to ensure synchronization between the local time-of-day clock and the central station clock. Further, with a coded order input unit 24, the order data may be also inputted to the comparator 36 and compared to order data also encoded in the down-loaded data from the central station. If there is an error between the order data inputted from order unit 24 and the down-loaded order data, an error detector 46 can provide an input to microprocessor 30 to display an error message on television screen 18 and, if desired, block the storage of the video data.

Access to the video data storage memory 20 from the television set 18 is via the microprocessor 30 and a memory read/write control unit 44. Commands from the microprocessor 30 cause the controller 44 to store, retrieve and erase video data in memory 20.

Referring now to FIG. 3 in addition to FIG. 2, in operation, the limit data is decoded from the down-loaded data stream, as indicated at block 50. This limit data may comprise a time limit or limit the number of accesses to the data, or both. The limit data is stored at block 52 in register 34 and a comparison is made at decision block 54 to determine if the limit has been reached. In the case of a time limit, this comparison can be made with the time-of-day clock 38 and with a limit on the number of accesses, the comparison can be made with access data from microprocessor 30. If the result of the comparison step at block 54 is negative, the microprocessor 30 processes access requests from the television set 18 to the video data stored in memory 20 as indicated at block 56. If the result of the comparison step at block 54 is affirmative, the microprocessor 30 issues a command to controller 44 to erase the video data stored in memory 20 or to otherwise block access to the data by the television set 18.

While the invention has been described in terms of a single preferred embodiment, those skilled in the art will recognize that the invention can be practiced with modification within the spirit and scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is as follows:

1. A method for providing a video product from a central station to a user site, comprising the steps of:
   transmitting from said central station to said user site a digital data stream comprising said video product, and data establishing a limit for authorized viewing of said video product;
   storing said video product at said user site;
   decoding said data establishing a limit for authorized viewing of said video product;
   storing a result of said decoding step;
   blocking access to said video product stored at said user site if said limit for authorized viewing is exceeded.

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2. A method for providing a video product from a central station to a user site, comprising the steps of:

transmitting from said central station to said user site a digital data stream comprising said video product, data establishing a time period during which viewing of said video product is authorized;

storing said video product at said user site;

decoding said data establishing a time period during which viewing of said video product is authorized;

storing a result of said decoding step;

comparing an output of a local clock signal generator with said result of said decoding step; p1 erasing said video product stored at said user site if the result of said comparing step is that the time period during which viewing of said video product is authorized has expired.

6

3. A method for providing a video product from a central station to a user site, comprising the steps of:

transmitting from said central station to said user site a digital data stream comprising said video product, data establishing a time period during which viewing of said video product is authorized, and time of day clock synchronizing data;

storing said video product at said user site;

decoding said data establishing a time period during which viewing of said video product is authorized;

storing a result of said decoding step;

comparing an output of said local clock time of day signal generator with said result of said decoding step;

erasing said video product stored at said user site if the result of said comparing step is that the time period during which viewing of said video product is authorized has expired.

* * * * *

EXHIBIT B

1

1

2   UNITED STATES DISTRICT COURT

3   DISTRICT OF DELAWARE

4

5   AMERICAN PATENT   )

    DEVELOPMENT CORPORATION,   )

6   LLC,   )

)

7   Plaintiff,   )

)

8   vs.   )   No. 07-605-JJF

)

9   MOVIELINK, LLC,   )

)

10   Defendant.   )

    - - - - - - - - - - - - - - - -)

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12

13

14

15   August 14, 2008

16   9:02 a.m.

17

18   Deposition of NORTON GARFINKLE, held at

19   the offices of Reed Smith, 599 Lexington

20   Avenue, New York, New York, pursuant to

21   notice, before Laurie A. Collins, a Registered

22   Professional Reporter and Notary Public of the

23   State of New York.

24

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31

1   N. Garfinkle

2   question.

3   Q.   Okay. Did you or anyone on your behalf

4   ever program software that would be used to

5   download videos on demand?

6   A.   No.

7   MR. WASSERMAN: Object to the form of

8   the question.

9   Q.   Did you or anyone on your behalf ever

10   put together a computer or computer system that

11   would download videos on demand?

12   MR. WASSERMAN: Object to the form of

13   the question.

14   A.   No.

15   MR. BREEDLOVE: What's the basis of

16   your objection?

17   MR. WASSERMAN: Form.

18   MR. BREEDLOVE: What form? What

19   specifically, so I know how to fix it?

20   MR. WASSERMAN: You're using technical

21   terms without defining them in your question.

22   Q.   Did you understand my question, sir?

23   MR. WASSERMAN: Same objection.

24   MR. BREEDLOVE: What's the basis for

25   that objection?

35

1   N. Garfinkle

2   about that?

3   A.   The words "put together."

4   Q.   Manufacture.

5   MR. WASSERMAN: Objection.

6   A.   Physically manufacture?

7   Q.   Correct.

8   MR. WASSERMAN: Object to the form of

9   the question.

10   A.   No.

11   Q.   Did you or anyone on your behalf ever

12   assemble computers or any computer parts that

13   would allow a user to download videos on demand?

14   MR. WASSERMAN: Object to the form of

15   the question.

16   A.   The description of the system in the

17   claims is the description of the system.   If

18   you're being very precise and asking me did we

19   physically write software, did we physically build

20   hardware, the answer is no.

21   If you're asking me did we design a

22   system and present the system in a way that

23   involves an invention, the answer is we did

24   provide an invention.

25   Q.   My question is whether you assembled a

36

1   N. Garfinkle

2   computer system or any other type of system that

3   would allow an end user to download videos on

4   demand.

5   MR. WASSERMAN: I object to the form of

6   the question.

7   A.   We described a system, invented a

8   system and described it in claims, that would

9   allow anyone to do that.

10   Q.   I understand you want to tell me that,

11   and I object to your answer as nonresponsive.

12   Okay?

13   MR. WASSERMAN: Objection.

14   A.   Well, then I don't understand the

15   question.

16   MR. BREEDLOVE: Can you read back the

17   question?

18   Q.   And then I'd like you to tell me what

19   you don't understand about it and I'll try to

20   clarify.

21   (Record read as follows: My question is

22   whether you assembled a computer system or any

23   other type of system that would allow an end

24   user to download videos on demand.)

25   A.   What do you mean by "assemble"?

37

1   N. Garfinkle

2   MR. WASSERMAN: I object to the form of

3   the question.

4   Q.   What don't you understand about

5   "assemble"?

6   A.   I don't understand whether you're

7   talking about describe or physically put machines

8   together.

9   Q.   Physically put machines together.

10   A.   We did not.

11   Q.   Did you understand you to state the

12   position that anyone could take what's written in

13   your patents and implement a video-on-demand

14   system?

15   MR. WASSERMAN: Object to the form of

16   the question.

17   A.   It is my belief that anyone skilled in

18   the art could do that.

19   Q.   Ah.

20   Mr. Garfinkle, have you ever physically

21   assembled a system for downloading videos on

22   demand?

23   MR. WASSERMAN: I object to the form of

24   the question.

25   A.   If you'll elaborate the word

41

1   N. Garfinkle

2   nonresponsiveness as I feel appropriate, as

3   the rules require me to do.

4   MR. WASSERMAN: Just ask questions,

5   counsel.

6   MR. BREEDLOVE: Goodness.

7   Q.   You testified earlier that you believe

8   the '402 patent describes a system that a person

9   of skill could physically assemble; is that

10   correct?

11   MR. WASSERMAN: I object to the form of

12   the question.

13   A.   A person of skill could implement to

14   achieve the result.

15   Q.   Could implement to achieve the result?

16   MR. WASSERMAN: I object to the form of

17   the question.

18   Q.   Is that what you said?

19   A.   Yes.

20   MR. WASSERMAN: I object to the form of

21   the question.

22   Q.   Did you personally ever implement a

23   system to achieve the result?

24   MR. WASSERMAN: I object to the form of

25   the question.

42

N. Garfinkle

1

2   A.   Other than describing the invention in

3   the claims, no.

4   Q.   Do you know how to implement a system

5   to achieve the result?

6   MR. WASSERMAN: I object to the form of

7   the question.

8   A.   Since I am a person skilled in the art,

9   and since the art is clear in the claims, perhaps

10 the better way of saying that is I am a person

11 skilled in the art, and the art is clear in the

12 claims, the invention is clear in the claims. And

13 since I consider myself -- and I consider myself a

14 person skilled in the art.

15   I think that's the answer to your

16 question.

17   MR. BREEDLOVE: Object, nonresponsive.

18   MR. WASSERMAN: Counsel, you don't need

19   to object to anything that's not responsive.

20   Just ask questions.

21   MR. BREEDLOVE: Don't interrupt me,

22   please.

23   MR. WASSERMAN: Objection.

24   Q.   The question is do you know how to

25 implement a system to achieve the result.

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2   the end of the day, it was assigned to APDC. And

3   between -- I'm not sure whether it was assigned to

4   me, reassigned to me, came from GLP II directly,

5   or somehow each -- either of those two entities

6   assigned whatever title and interest I had to

7   APDC. In any of those cases, the patent was

8   always under my primary control in any of those

9   related 6 structures.

10   (Exhibit 58, patent assignment from

11   Garfinkle to Garfinkle Limited Partnership II,

12   marked for identification, as of this date.)

13   Q.   Let me hand you Exhibit 58. Take a

14   minute to look at that and tell me if you

15   recognize what that's about.

16   (Pause.)

17   A.   I've looked at it.

18   Q.   Okay. First of all, do you see the

19   Bates numbers in the lower right that begins APD?

20   A.   Yes.

21   Q.   If you look at APD 37.

22   A.   Yes.

23   Q.   Okay. Is that an assignment that you

24   made of the '402 and other patents?

25   MR. WASSERMAN: I object to the form of

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2   the Movielink Web site?

3   MR. WASSERMAN: I object to the form of

4   the question.   Counsel, are you directing him

5   to any particular time frame or in his life?

6   MR. BREEDLOVE: In his life.

7   MR. WASSERMAN: Do you understand the

8   question now?

9   THE WITNESS: Yes.

10   Yes.

11   Q.   When was that?

12   A.   The best of my recollection was

13   sometime 2007.

14   Q.   Was that before APDC sued Movielink?

15   A.   Yes.

16   Q.   Who had the '402 patent in 2002?   Was

17   that Garfinkle LP?

18   MR. WASSERMAN: I object to the form of

19   the question.

20   Q.   Roman numeral II?

21   A.   I don't recall.

22   Q.   Ultimately, though, did you have

23   control of the '402 patent?

24   A.   I did, at all times.

25   Q.   At all times.

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2   something?

3   Q.   Correct, I absolutely am.

4   MR. WASSERMAN: I object to the form of

5   the question.

6   A.   I --

7   Q.   Now's your chance. Correct me if I'm

8   wrong. The jury wants to hear it.

9   MR. WASSERMAN: I object to the form of

10   the question. Object to the form of the

11   question. Don't argue with the witness; just

12   ask questions.

13   A.   I don't know how to answer the

14   question.

15   Q.   Can you tell the jury whether you ever

16   wrote down your idea besides sending papers to

17   your lawyer?

18   A.   I don't recall.

19   Q.   Without getting into the substance of

20   the papers you sent your lawyer, can you tell me,

21   were these handwritten papers?

22   A.   I don't recall.

23   MR. WASSERMAN: Object to the form of

24   the question.

25   Q.   Can you tell me whether they were

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1   N. Garfinkle

2   MR. WASSERMAN: Mr. Garfinkle, don't

3   talk over counsel.

4   Counsel, please try not to talk over

5   the witness before he's finished.

6   A.   In the systems where we build things,

7   it's not my job to write software or to build

8   hardware. It's my job to supervise the people who

9   I have hired who know these things far better --

10   these specific things far better than I do. And

11   it's my job to interact with them so the product

12   that is produced that implements the invention

13   that I have invented achieves the goal.

14   Q.   So people wouldn't ask you to program

15   any software to carry out this decoding step

16   because they know that's not your job?

17   MR. WASSERMAN: Object to the form of

18   the question.

19   A.   We all know that's not my job.

20   Q.   And we also know, don't we, that you

21   don't know any computer languages?

22   MR. WASSERMAN: Object to the form of

23   the question.

24   A.   I don't write software.

25   Q.   Never have?

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2   MR. WASSERMAN: I object to the form of

3   the question.

4   A.   I have never written a software.

5   Q.   So we've talked about software now.

6   Did you know how to carry out the decoding step

7   using hardware?

8   MR. WASSERMAN: I object to the form of

9   the question.

10   Q.   At any time?

11   MR. WASSERMAN: I object to the form of

12   the question.

13   A.   I do not accept the premise of your

14   question.

15   Q.   What's my premise?

16   A.   Your premise is I don't know anything

17   about software, and your new premise is I don't

18   know anything about hardware. That's not a true

19   premise. That's not correct.

20   Q.   I'm asking you physically how would you

21   put together hardware to decode this data.

22   MR. WASSERMAN: I object to the form of

23   the question.

24   A.   It is not my job physically to do

25   either of those things. When we implement systems

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N. Garfinkle

1 within the framework of any of my companies, my

2 job is to design, invent solutions, and I have

3 people who write hardware -- who write software,

4 who construct hardware. And it is those people

5 who actually do the specifics of the kind of thing

6 that you're talking about. And that is the way we

7 function in an actual implementation environment.

8   Q.   What do you mean, "an implementation

9 environment"?

10   A.   Well, I've -- if we go back to my

11 history, in various companies -- Brand Rating

12 Research Corporation was a company that had a

13 central system of computers back in the days when

14 there were many, many computers in one location,

15 and I designed the service.

16   I worked with the software manager to

17 make sure the software managed the process and

18 managed the content, and I utilized the hardware

19 that could be used to execute that. I had a

20 hardware manager and software manager, and I was

21 the design person that interacted with them to

22 make sure that the system I designed was

23 implemented.

24   The same thing was true of Cambridge

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N. Garfinkle

A.   Yes.

Q.   Can you please tell the jury how
specifically you knew how to actually implement
that step, if you knew, back in 1993?

MR. WASSERMAN: I object to the form of
the question.

A.   I knew how in a general sense it could
be implemented either way. And had I been
building the system, I would have used my
personnel who could -- would in fact physically
implement it.

Q.   And isn't it true that you personally
could not have physically implemented it and
that's why you needed to rely on your personnel?

MR. WASSERMAN: I object to the form of
the question.

A.   That was my practice, not just in this
invention but in all the things that I do.

Q.   In this hardware implementation of the
decoding step, what piece of hardware would be
used?

MR. WASSERMAN: I object to the form of
the question.

A.   The hardware implementation could have

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1

2   C E R T I F I C A T E

3   STATE OF NEW YORK   )

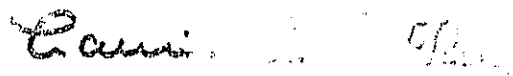4   : ss.

5   COUNTY OF NEW YORK   )

6

7   I, LAURIE A. COLLINS, a Registered

8   Professional Reporter and Notary Public

9   within and for the State of New York, do

10   hereby certify:

11   That NORTON GARFINKLE, the witness

12   whose deposition is hereinbefore set forth,

13   was duly sworn by me and that such deposition

14   is a true record of the testimony given by

15   the witness.

16   I further certify that I am not related

17   to any of the parties to this action by blood

18   or marriage, and that I am in no way

19   interested in the outcome of this matter.

20   IN WITNESS WHEREOF, I have hereunto set

21   my hand this 18th day of August 2008.

22

23   _____

24   LAURIE A. COLLINS, RPR

25

EXHIBIT C

LAW OFFICES

WHITHAM & MARHOEFER
A PROFESSIONAL CORPORATION
INTELLECTUAL PROPERTY LAW

11800 SUNRISE VALLEY DR., SUITE 220
RESTON, VIRGINIA 22091
TELEPHONE (703) 391-2610

APPLICATION
FOR
UNITED STATES
LETTERS PATENT

Applicant: Norton Garfinkle
For: SYSTEM FOR LIMITING USE OF DOWN-LOADED
        VIDEO-ON-DEMAND DATA

Docket: CAM.001

CAM.001

10

CLAIMS

Having thus described my invention, what I
claim as new and desire to secure by Letters Patent
is as follows:

1   1.   A digital data system that limits user access to
2   video data down-loaded to a video data memory from a
3   central station, comprising in combination:
4   means for retrieving video data in said video
5   data memory in response to user generated requests;
6   means for generating a user access limit
7   signal;
8   means to block access to video data stored in
9   said video data memory in response to said user
10 access limit signal.

1   2.   A digital data system that limits user access
2   to video data down-loaded to a video data memory
3   from a central station as in claim 1, wherein said
4   means to block access to video data stored in said
5   video data memory erases said video data.

1   3.   A digital data system that limits user access
2   to video data down-loaded to a video data memory
3   from a central station as in claim 1, wherein said
4   means to block access to video data stored in said
5   video data memory limits the time period during
6   which a user can access video data stored in said
7   video data memory.

1   4.   A digital data system that limits user access
2   to video data down-loaded to a video data memory
3   from a central station as in claim 1, wherein said
4   means to block access to video data stored in said

CAM.001

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5   video data memory limits the number of times a user
6   can access said video data stored in said video data
7   memory.

1   5.   A digital data system that limits user access
2   to video data down-loaded to a video data memory
3   from a central station as in claim 1, wherein said
4   video data down-loaded to said video data memory
5   from a central station includes user access data,
6   and said system further includes means for decoding
7   and means for storing said user access data, and
8   said means for generating a user access limit signal
9   includes means for comparing said user access data
10   to a local clock reference.

1   6.   A digital data system that limits user access
2   to video data down-loaded to a video data memory
3   from a central station as in claim 1, wherein said
4   video data down-loaded to said video data memory
5   from a central station includes user access data,
6   and said system further includes means for decoding
7   and means for storing said user access data, and
8   said means for generating a user access limit signal
9   includes means for comparing said user access data
10   to the number of user generated requests.

1   7.   A method that limits user access to video data
2   down-loaded to a video data memory from a central
3   station comprising the step of:
4   erasing said video data in said video data
5   memory at an elapsed time interval after said video
6   data has been down-loaded.

1   8.   A method that limits user access to video data
2   down-loaded to a video data memory from a central

CAM.001

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3   station comprising the step of:
4   erasing said video data in said video data
5   memory after said video data has been accessed a
6   predetermined number of times by a user.

EXHIBIT D

UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/072,927	06/07/93	GARFINKLE	N CAM.001

EXAMINER
CAIN, D

ART UNIT	PAPER NUMBER
2202	

22M2/0506

WHITHAM & MARHOEFER
RESTON INTERNATIONAL CENTER
11800 SUNRISE VALLEY DR.
RESTON, VA   22091

DATE MAILED: 05/06/94

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined   ☐ Responsive to communication filed on _____   ☐ This action is made final.

A shortened statutory period for response to this action is set to expire _____3_____ month(s), _____ days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned.   35 U.S.C. 133

Part I   THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

1. ☒ Notice of References Cited by Examiner, PTO-892.   2. ☒ Notice re Patent Drawing, PTO-948.
3. ☒ Notice of Art Cited by Applicant, PTO-1449.   4. ☐ Notice of Informal Patent Application, Form PTO-152.
5. ☐ Information on How to Effect Drawing Changes, PTO-1474.   6. ☐ _____

Part II   SUMMARY OF ACTION

1. ☒ Claims _1 – 8_ are pending in the application.

Of the above, claims _____ are withdrawn from consideration.

2. ☐ Claims _____ have been cancelled.

3. ☐ Claims _____ are allowed.

4. ☒ Claims _1 – 8_ are rejected.

5. ☐ Claims _____ are objected to.

6. ☐ Claims _____ are subject to restriction or election requirement.

7. ☒ This application has been filed with informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.

8. ☐ Formal drawings are required in response to this Office action.

9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).

10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).

11. ☐ The proposed drawing correction, filed on _____ has been ☐ approved. ☐ disapproved (see explanation).

12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received ☐ been filed in parent application, serial no. _____; filed on _____.

13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.

14. ☐ Other

EXAMINER'S ACTION

PTOL-326 (Rev 9-89)

Serial Number: 08/072,927   -2-
Art Unit: 2202

1.   This application has been filed with informal drawings which
are acceptable for examination purposes only. Formal drawings
will be required when the application is allowed.

                    Claim Rejections - 35 USC § 102
2.   The following is a quotation of the appropriate paragraphs
of 35 U.S.C. § 102 that form the basis for the rejections under
this section made in this Office action:

        A person shall be entitled to a patent unless --
        (b) the invention was patented or described in a printed
        publication in this or a foreign country or in public use or
        on sale in this country, more than one year prior to the
        date of application for patent in the United States.

        (e) the invention was described in a patent granted on an
        application for patent by another filed in the United States
        before the invention thereof by the applicant for patent, or
        on an international application by another who has fulfilled
        the requirements of paragraphs (1), (2), and (4) of section
        371(c) of this title before the invention thereof by the
        applicant for patent.

3.   Claims 1 and 3 are rejected under 35 U.S.C. § 102(b) as

being anticipated by Hyatt, et al.

        Hyatt, et al. (Hyatt) teaches the claimed digital data

system that limits user access to video data down-loaded to a

video data memory from a central station, comprising in

combination: means for retrieving video data in the video data

memory in response to user generated requests (column 1, lines

16-37); means for generating a user access limit signal (1) and

means to block access to video data stored in the video data

memory in response to the user access limit signal (security

system control switches)

        Hyatt further teaches limiting user access to video data

down-loaded to a video data memory from a central station wherein

the means to block access to video data stored in the video data

Serial Number: 08/072,927   -3-
Art Unit: 2202

memory limits the time period during which a user can access

video data stored in the video data memory (column 6, lines 59-

67)

4.   Claim 4 is rejected under 35 U.S.C. § 102(e) as being

anticipated by Morales.

     Morales teaches the digital data system of claim 1, further

including limiting user access to video data down-loaded to a

video data memory from a central station wherein the means to

block access to video data stored in the video data memory limits

the number of time a user can access the video data stored in the

video data memory.

                    Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. § 103 which forms
the basis for all obviousness rejections set forth in this Office
action:

          A patent may not be obtained though the invention is not
          identically disclosed or described as set forth in section
          102 of this title, if the differences between the subject
          matter sought to be patented and the prior art are such that
          the subject matter as a whole would have been obvious at the
          time the invention was made to a person having ordinary
          skill in the art to which said subject matter pertains.
          Patentability shall not be negatived by the manner in which
          the invention was made.

          Subject matter developed by another person, which qualifies
          as prior art only under subsection (f) or (g) of section 102
          of this title, shall not preclude patentability under this
          section where the subject matter and the claimed invention
          were, at the time the invention was made, owned by the same
          person or subject to an obligation of assignment to the same
          person.

Serial Number: 08/072,927   -4-
Art Unit: 2202

6.   Claims 2 and 8 are rejected under 35 U.S.C. § 103 as being
unpatentable over Morales.

    The difference between Morales and the claims is the erasing
of video data.

    Morales teaches erasing the access software to block access
(column 6, lines 26-29) It would have been obvious, in view of
this teaching, to erase any relevant data, including the video
data, to accomplish the same effect.

7.   Claim 5 is rejected under 35 U.S.C. § 103 as being
unpatentable over Hyatt.

    The difference between Hyatt and the claim is the presence
of the user access data in the video data.

    Hyatt teaches the use of user access data in video data in
conjunction with a prior art system. It would have been obvious
to utilize such a configuration in conjunction with the Hyatt
system to increase security.

8.   Claims 6 and 8 are rejected under 35 U.S.C. § 103 as being
unpatentable over Morales in view of Hyatt.

    The difference between Morales and claim 6 is the presence
of the user access data in video data.

    It would have been obvious, as recited above, to utilize
such a configuration to increase security.

    The difference between Morales and claim 8 is the use of a
time limit.

Serial Number: 08/072,927   -5-
Art Unit: 2202

    Hyatt teaches limiting access by time. It would have been
obvious to restrict access by time as taught by Hyatt in the
Morales system to provide for alternative uses of the video data.

    Any inquiry concerning this communication should be directed
to Primary Examiner David Cain at telephone number (703) 308-
0463.

April 29, 1994

DAVID C. CAIN
PRIMARY EXAMINER
GROUP 2200

EXHIBIT E

United States Patent [19]

Hyatt et al.

[11]   **4,358,672**

[45]   **Nov. 9, 1982**

[54] **PAY PER VIEW TELEVISION CONTROL DEVICE**

[75] Inventors: Robert K. Hyatt, Burlington, Conn; Robert F. Jacobs, Irvington, N.Y.

[73] Assignee: The TeleMine Company, Inc., New York, N.Y

[21] Appl. No: 150,420

[22] Filed: May 16, 1980

[51] Int. Cl.³ G06K 5/00
[52] U.S. Cl. 235/380; 235/381; 235/382; 235/484; 235/485
[58] Field of Search 235/380, 381, 382, 493, 235/483, 484, 485, 486; 358/115; 340/825.33, 825.34, 825.35

[56]   **References Cited**

U.S. PATENT DOCUMENTS

3,700,862	10/1972	Snook	235/493
3,890,461	6/1975	Vogelman	358/115
4,058,839	11/1977	Dartany	235/493
4,095,739	6/1978	Fox	235/382
4,197,988	4/1980	Moss	235/381

Primary Examiner—Harold I. Pitts
Attorney, Agent, or Firm—J. David Dainow

[57]   **ABSTRACT**

A method and apparatus for providing access to an electrically controlled service for perdetermined periods of time employs a dual magnetically striped record medium encoded in a CRB format with data indicative of the periods of time during which access is to be provided. The data is read by a reader and stored in a processor having an internal clock and a comparator for comparing the instantaneous time output of the clock with the predetermined time period data encoded on the record medium for enabling a security device only when the instantaneous time is within the predetermined time period.
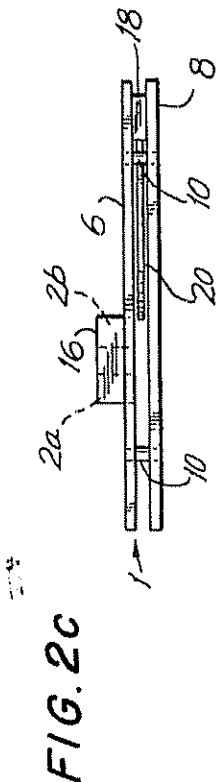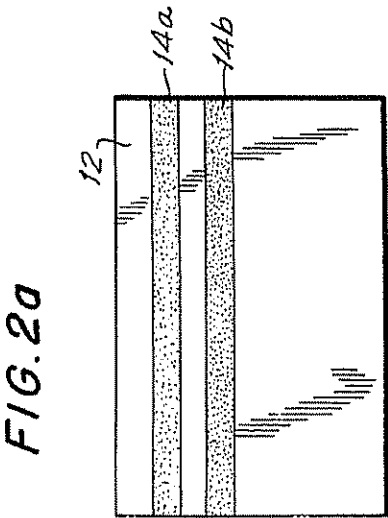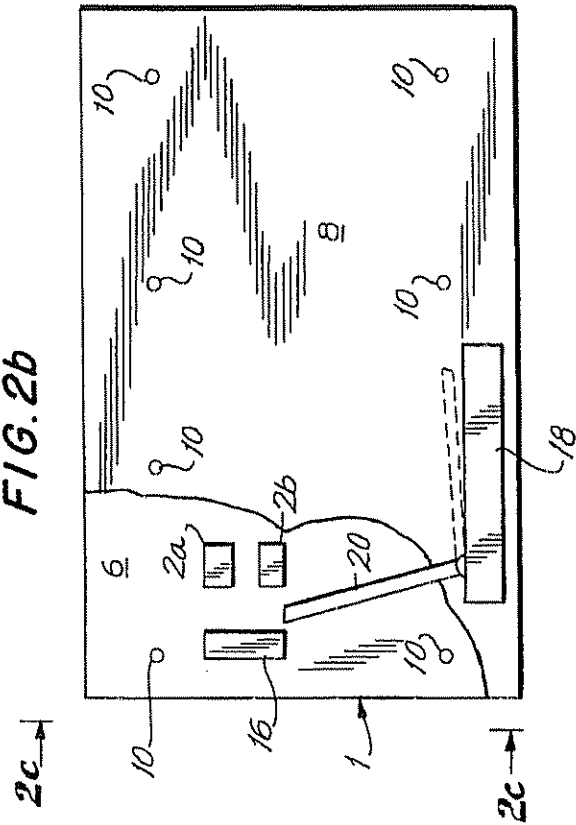
13 Claims, 7 Drawing Figures
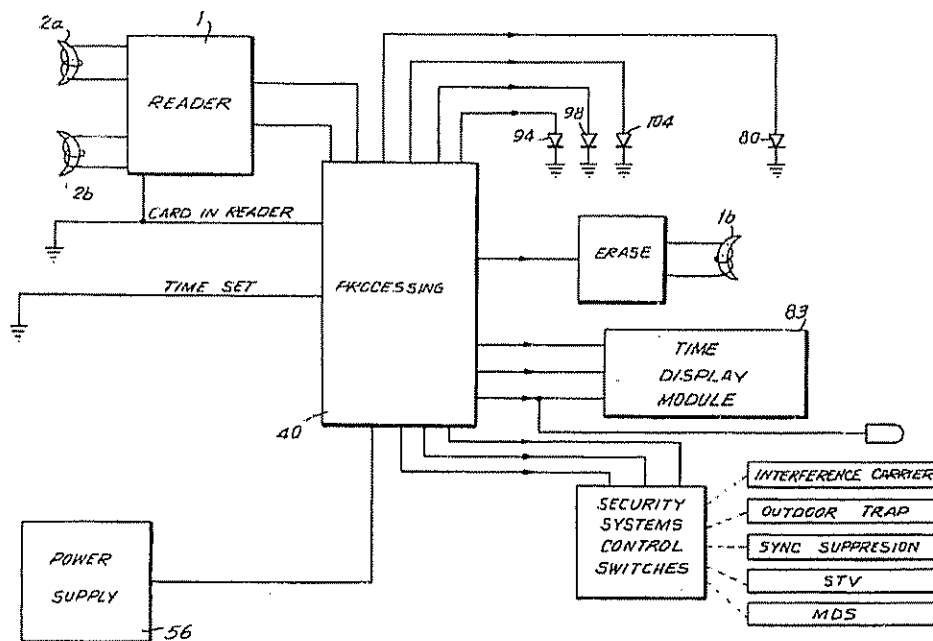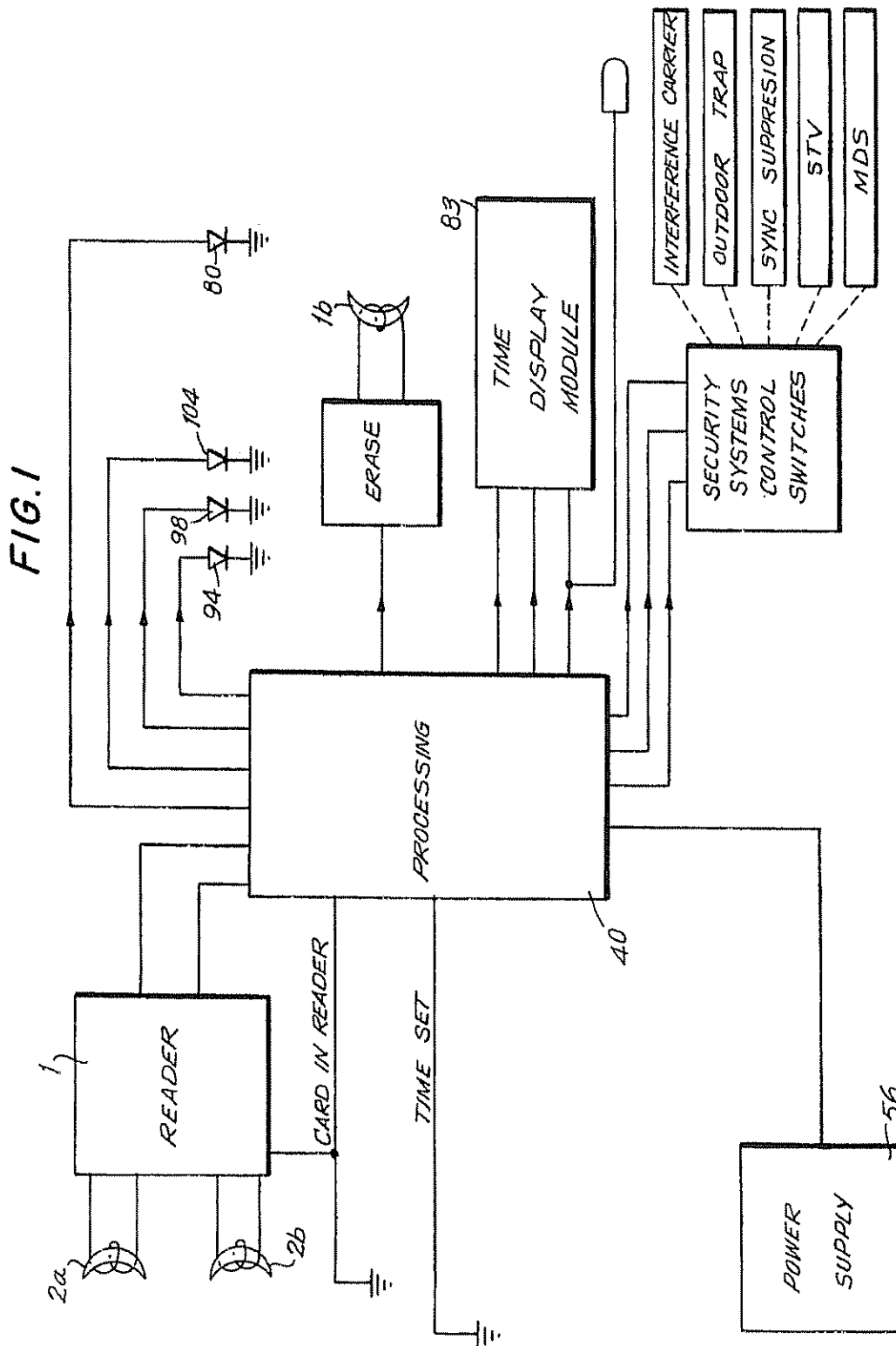
FIG.1

FIG.2b
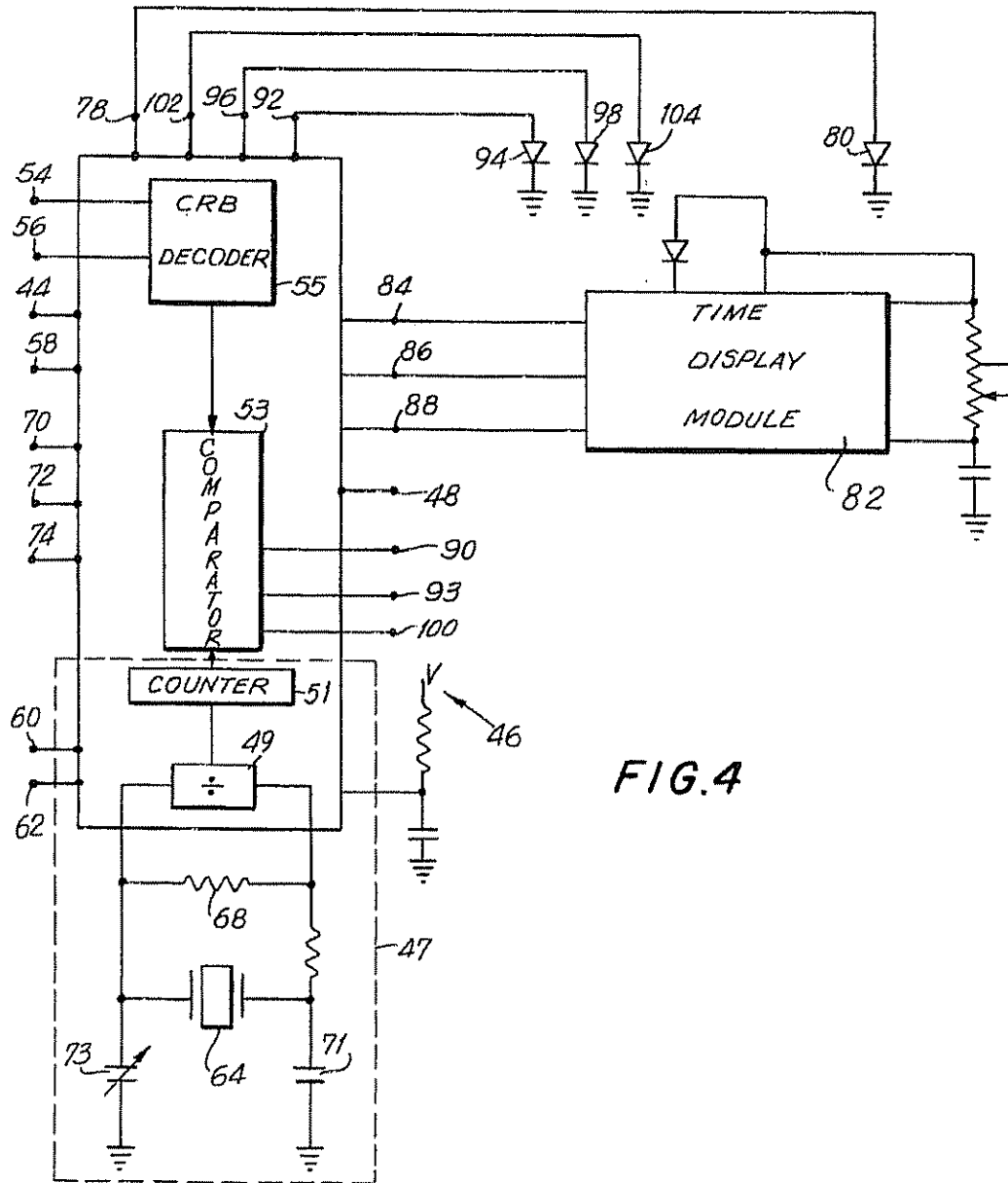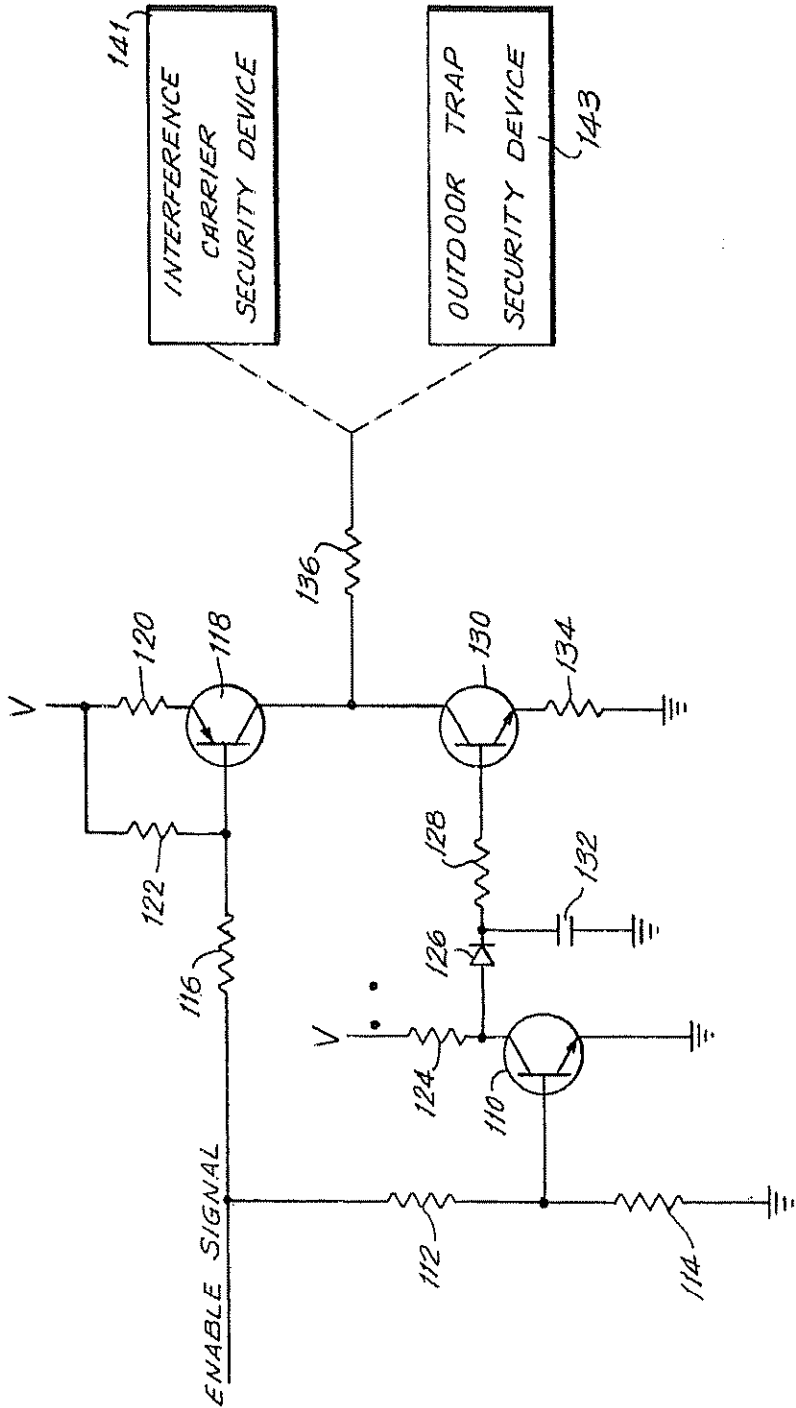
FIG.2c

FIG.2a

FIG.3

FIG.4
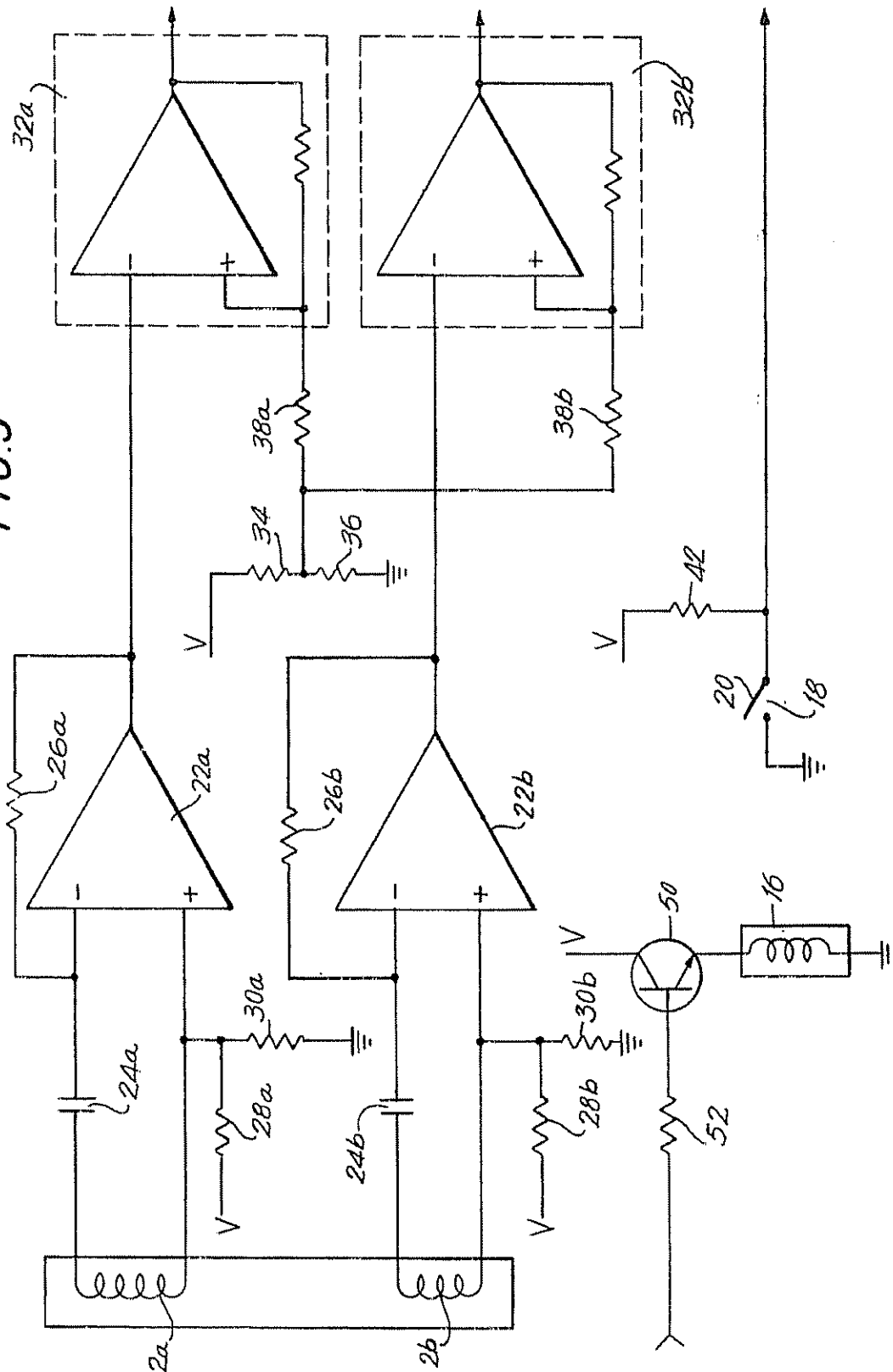
FIG. 5

4,358,672

1

PAY PER VIEW TELEVISION CONTROL DEVICE

BACKGROUND OF THE INVENTION

The present invention relates to apparatus for limiting access to an electrically controlled service to authorized users of the service. More specifically, the present invention concerns apparatus for enabling a security device which, when disabled, prevents unauthorized persons from gaining access to a service which is readily available to the user but for the impedance of the security device. The invention has numerous applications, as will subsequently be shown, one of which is in controlling access by television viewers to subscription television services.

Community antenna television (CATV) enables subscribers to receive an enhanced signal carrying television programs broadcast on standard television channels, typically over cables connected to viewers' receivers, for improved program reception. As an adjunct to the broadcast for publically available programming, CATV operators have offered pay TV services wherein subscribers are supplied with additional channels of TV programming, not publicly available, in return for payment of a fee which, depending on the nature of the subscription service, may be a periodic fee, e.g. monthly, or a single usage fee which entitles the viewer to television viewing of a specific channel of programming during a preselected time period. CATV services may include the provision of several channels of television viewing which may be individually or collectively made available to subscribers. For example, one channel of television viewing may include first run movies or live theater plays; another may provide sports events; while still another channel may provide a schedule of television programs not available on the public access channels.

In order to limit viewing of special programs to paying subscribers, it is necessary to be able to selectively enable and disable the apparatus which provides to each subscriber's television receiver, a signal suitable for viewing. As this cannot be feasibly done by having a technician from the CATV operator visit the subscriber's home before and after each program is viewed to perform the enabling and disabling operation, since it would be extremely costly, other methods of restricting access to TV programs are necessary. One approach to overcoming the need to send a technician to a subscriber's home is to enable and disable the subscriber's access to programming by remote control through the transmission of enabling and disabling signals to each subscriber's residence by complex transmitters and receivers and intermediary connecting lines. The apparatus required to accomplish remote control is complex and expensive and can only be feasibly used where there are a large number of subscribers among whom the cost of the equipment can be amortized over a period of time. The initial startup costs for assembling such a system and the uncertainty of the number of subscribers who can be expected to participate has discouraged smaller CATV operators from providing single program viewing services. Examples of systems which require the transmission of data from the CATV operator to the subscriber's television receiver are found in the U.S. Pat. No. 3,890,461 to Vogelman for a Ticket Operated Subscription Television Receiver and U.S. Pat No 4,058,830 to Guinet, et al for One Way Data Transmission System. The systems described in the foregoing

2

patents rely on comparison between the transmitted data and data on a card furnished to the television subscriber

It is also known that a magnetically encoded ticket or record medium can be used to actuate a switching device for energizing an electrical mechanism such as an electrically operated gate for permitting access to building or a depository in a bank. Such tickets, however, do not lend themselves to use for limited subscription television viewing since they can be re-used indefinitely and, hence, once supplied to a subscriber provide no way of limiting the time during which TV access permitted by the ticket or record medium can be obtained. One attempt to remedy this problem is disclosed in the aforementioned Vogelman patent which discloses the destruction of the information on the data ticket by destroying the ticket with a motor operated device.

It is also known in the art to employ a magnetic stripe to actuate a security device for enabling television viewing. Such a device is disclosed in U.S. Pat. No. 4,012,583 to Kramer for a pay TV control system which discloses a motel room key having a magnetizable stripe which permits a guest of the motel to gain access to television programs for viewing on a television receiver in his room. However, no information is encoded on the magnetizable stripe of the key in the Kramer patent so that the time of viewing or channels to be viewed cannot be selectively controlled.

Thus, while it is seen that the prior art includes devices for or adaptable to gaining access to subscription television services, those which can economically be provided only at a subscriber's television receiver are very limited as to flexibility in controlling time and channel access, while systems which permit greater flexibility are complex and expensive and require transmission of special information from the television broadcasting head end to subscribers in addition to the television viewing signals.

SUMMARY OF THE INVENTION

The instant invention overcomes the aforementioned problems of the prior art in teaching the construction of and method of operating apparatus for providing access to an electrically controlled service for predetermined periods of time including a record medium adapted to have encoded on it data indicative of a definite time period during which access to the service is to be permitted and one or more sub-periods within a time period which sub-periods can be coextensive with or of shorter duration than the time period, a reader adapted to receive the record medium and store the data encoded thereon, a processor including a clock circuit having an output signal indicative of instantaneous time, including date, hour, minute and second, and a comparator for comparing the data stored in the reader with the clock output signal, and a security device operable in at least two states, one of which permits access to the service and the other of which prevents access to the service, the security device being responsive to the comparator for permitting and preventing access to the service as a function of the data encoded on the record medium and the instant time signal output of the clock. The invention provides for a dual head reader for reading data encoded on a data card, having parallel magnetic stripes, by the complementary return to bias method. The processor which compares the data encoded on the magnetic stripes with data generated by the internal

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clock controls a plurality of channels of programming each of which can function in a plurality of programming modes. Means for erasing the data encoded on the magnetic stripes after the data is read and stored is also provided. The apparatus of the invention can be employed in conjunction with numerous types of security devices.

It is therefore an object of the invention to provide access to an electrically controlled service through the use of a disposable card having data encoded thereon which can be furnished to a subscriber in return for advance payment.

Another object of the invention is to provide selective access to an electrically controlled service for predetermined periods of time without necessity for gaining access to the appliance which renders the service.

Still another object of the invention is to provide access to an electrically controlled service by means of an apparatus which is compatible with numerous types of available and future security devices.

A further object of the invention is to provide selective access to an electrically controlled service for a continuous predetermined period of time.

Still a further object of the invention is to provide selective access to an electrically controlled service during predetermined discrete sub-periods of time within an overall time period.

An additional object of the invention is to provide access to an electrically controlled service for a predetermined time duration immediately upon application of a data card to a card reader at the location of the service rendering appliance.

Other and further objects of the invention will be apparent from the following drawings and description of a preferred embodiment of the invention in which like reference numerals are used to designate like parts in the various views.

DESCRIPTION OF THE DRAWINGS

FIG. 1 is a functional block diagram of the apparatus of the preferred embodiment of the invention;

FIG. 2a is a plan view of a data card suitable for use with the apparatus of the preferred embodiment of the invention;

FIG. 2b is a plan view of an apparatus for receiving the data card of FIG. 2a in accordance with the preferred embodiment of the invention;

FIG. 2c is an elevation view of the apparatus shown in FIG. 2b.

FIG. 3 is an electrical schematic diagram of the circuitry employed in the card reader of the preferred embodiment of the invention;

FIG. 4 is a schematic signal flow diagram of the processor circuitry employed in the apparatus of the preferred embodiment of the invention; and

FIG. 5 is an electrical schematic diagram of a security device suitable for use in the apparatus of the preferred embodiment of the invention

DESCRIPTION OF THE PREFERRED
EMBODIMENTS

Referring now to the drawings, there is shown in FIG. 1 a functional block diagram of the apparatus of the preferred embodiment of the invention. The apparatus includes a reader 1 with magnetic reading heads 2a and 2b which are mounted on the card reader assembly 1. The magnetic read heads 2a and 2b can be similar to those employed in conventional tape cassette readers

the construction of which will be known to those skilled in the art. The card reader assembly 4 includes a top plate 6 and a bottom plate 8 which are mutually connected in parallel spaced relationship by spacer posts 10 to form a channel having a cross section congruent to the cross section of the card 12, therebetween for slidably receiving a data card 12 longitudinally inserted into the channel while preventing rotation or skewing of the card 12. On the data card 12 there are coded two parallel spaced magnetic stripes 14a and 14b having axes parallel to the axis of the channel along which the card 12 is translated as it is inserted into the reader 1, which are adapted to have encoded thereon, data specifying the channels of service to be offered to the subscriber and the times during which access to the service on each channel is to be provided. Mounted on the upper plate 6 adjacent and in longitudinal alignment with the data reading heads 2a and 2b is a magnetic erase head 16. The magnetic erase head 16 is energized to erase the data encoded on the card 12 only after the data has been read as will be described.

In order to sense the presence of a magnetically striped data card 12 in the card reader assembly a conventional mechanical switch 18 has an actuator arm 20 disposed in the channel of the card reader 1 for receiving the data card 12. Insertion of the data card 12 into the card reader 1 causes the switch 20 to pivot rearwardly thereby causing the normally open switch 18 contacts to close.

Referring additionally to FIG. 3 of the drawings, it is seen that the magnetic reading heads 2a and 2b include inductive coils which are respectively connected to the inputs of amplifiers 22a and 22b. Filtering of noise and other unwanted signals appearing at the outputs of the coil 2a and 2b is provided by capacitors 24a and 24b respectively. Each of the amplifiers 22a and 22b is provided with a respective feedback loop having a resistor 26a and 26b respectively.

A 5 volt bias voltage is applied to the positive input of amplifier 22a through a voltage divider circuit including resistor 28a and resistor 30a. Similarly a 5 volt bias signal is applied to the positive input of amplifier 22b through a voltage divider circuit including a resistor 28b and a resistor 30b.

The output of the amplifier 22a is applied to the input of a Schmitt trigger 32a. Similarly the output of amplifier 22b is applied to the input of a Schmitt trigger 32b. Bias voltage is applied to the Schmitt trigger circuits 32a and 32b by means of a common voltage divider circuit including resistors 34 and 36 and respective input resistors 38a and 38b which are connected to the respective positive inputs of the Schmitt trigger circuits 32a and 32b respectively.

The two magnetic stripes of the data card 12 are encoded in accordance with the complementary return to bias (CRB) method. Complementary return to bias is a two track technique which has heretofore been used in applications which permitted the low density bit rates and wide band width attending the method but has not been used for selective access to services which are electrically controlled and, in particular, to subscription television services. In CRB encoding, each data cell on the record medium is set to one of four states. In the first state which represents a no data condition, both tracks are at magnetic south. In the second state which represents a zero, the first track is at magnetic south and the second track is at magnetic north. In the third state which represents a binary one, the first track is at mag-

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netic north and the second track is at magnetic south. The fourth state wherein both tracks are at magnetic north can be used as an end of byte or other framing signal to separate data words. Because of the inherent inefficiency of CRB due to low density bit rates, CRB has been believed, until now, to be unsuitable for use in subscription television service applications. In addition the art has avoided CRB due to the necessity for wide band widths which are believed to increase vulnerability to noise and the susceptibility of the two track technique to skewing problems. However, CRB utilizes a reasonably simple logic network and has been found within the teachings of the invention, to be both a cost effective and highly reliable method of encoding data cards for subscription television use as employed in conjunction with the apparatus of the invention.

The magnetic impulses recorded on the dual stripes 14a and 14b of the data card 12 induce voltage pulses at the outputs of the read coils 2a and 2b which are amplified by the feedback amplifiers 22a and 22b. The irregular pulse signal outputs of the amplifiers 22a and 22b are converted to square wave pulses by the Schmitt triggers 32a and 32b respectively and then applied to a central processor 40.

As can be seen with reference to FIG. 3 the switch 18 is connected at one end to ground and at the other to a resistor 42 and parallel with input terminal 44 of a processor logic circuit in the central processor 40. The opposite end of the resistor 42 is connected to a 5 volt power supply. When the switch 20 is open, that is when there is no data card 12 in the card reader, the 5 volt signal appears at the input terminal 44 of the processor circuit 46 thereby indicating that there is no data card in the reader When the data card 12 is inserted in the reader 1, the switch arm 18 is pushed rearwardly thereby closing the switch 20 and bringing the input terminal 44 of the logic circuit 46 to ground potential thereby signalling the presence of the data card 12 in the card reader 1.

When it is desired to erase the data encoded on the magnetic stripes 14a and 14b of the data card 12, in order to prevent reuse of the card, an erase signal appears at output terminal 48 of the logic circuit 46. The positive signal at the output terminal 48 is applied to the base of a transistor 50 through base resistor 52. The positive signal at the base of the transistor 50 turns the transistor on thereby permitting current to flow from the 5 volt power supply through the collector to emitter junction of the transistor 50 and then to ground through the erase head 16. A single erase head 16 can be provided spanning both of the magnetic stripes or separate respective heads can be provided for erasing the data encoded on the dual magnetic stripes 14a and 14b. The data square wave pulse outputs of the Schmitt triggers 32a and 32b are applied to input terminals 58 of the processor circuit 46 to indicate whether proper AC power is being supplied to the system. A backup rechargeable battery is provided to provide sufficient power to run the system in the event there is an AC power failure. Upon indication from the signal applied to terminal 58 of the processor 46 that there has been an interruption in the AC power, the processor circuit 46 causes the backup battery voltage to be applied to power the apparatus The battery power is supplied to the processor circuit 46 at input terminals 60, 62 and 64. In addition to its backup function, the battery provides the 5 volt bias used in the system as previously described.

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A 32 kHz oscillator 64 provides timing signals to the processor circuit 46 through resistors 66 and 68 Undesirable harmonics from the oscillator are shunted to ground through capacitors 71 and 73, capacitor 73 preferably being a variable capacitor for precise tuning.

The processor circuit 46, which can be a National Semi-Conductor integrated circuit COP420C, includes a clock network 47 which employs a frequency divider 49 and counter circuit 51 in cooperation with the oscillator 64, for generating instantaneous time signals indicative of the date, day, hour, minute and second, in a manner known to those skilled in the art Input terminals 70,72 and 74 are provided on the processor circuit 46 for receiving clock setting signals which can be applied to the processor circuit 46 for initially setting the clock network 47 therein to the current data and time. The setting of the clock network 47 in the processor 46 is preferably done by the manufacturer or distributor of the apparatus before delivery to the consumer for installation on a television receiver. Instead of applying the clock setting signals directly to the processor circuit 46, clock setting signals can be encoded on a magnetic card and read by the card reader 1. An output signal from the card reader responsive to the clock setting signals encoded on the magnetic card can be applied to the processor circuit 46 to set the clock network of the processor 46 to the appropriate date and time.

Upon insertion of the data card 12 into the reader, the data on the card is read and analyzed by the processor circuit 46 which includes a CRB decoder 55. If the data is of proper format and deemed valid, a signal appears at output terminal 78 of the processor circuit 46 to energize a light emitting diode 80 thereby causing the diode 80 to light and indicate that the data card 12 has been accepted. In the absence of valid data, there is no change in the state of the output 78 and the light emitting diode 80 remains extinguished.

Clock data developed in the processor 46 is applied to the input of a time display module 82 which includes the decoding and driving circuitry for a digital time display 83 which displays the instantaneous time. An output signal appearing at terminal 84 of the processor circuit 46 enables the time display module 82 to receive the instantaneous time data from the clock network 47 in the processor 46. Only when the clock data is valid does the enable signal appear at the output terminal 84 of the processor circuit 46. The clock data itself appears at output terminal 86 of the processor circuit 46 and is applied to a respective input of the time display module 82. Output terminal 88 of the processor circuit 46 is also connected to the time display module 82 for setting the initial time for display and feeding data to the time display module 82. The time display module 82 decodes the incoming data from the clock 47 and provides appropriate output signals for digital display. The time display module 82 is a component known to the art and can be an integrated circuit having the manufacturer's designation NSM4000A

The apparatus of the preferred embodiment of the invention is capable of activating up to three channels of programs in one of three modes of operation or a combination of modes. The channel or channels to be activated are defined by the data encoded on the data card 12 as are the time periods during which the data card 12 is valid and the sub-periods, within the time periods in which the data card 12 is valid during which viewing on each of the channels is to be permitted A sub-period can encompass the entire time period during which the

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data card 12 is valid, or can be a shorter period of time included in the time period during which the data card 12 is valid.

There are three modes of operation of the apparatus of the preferred embodiment of the invention. These modes of operation which have application in controlling access to subscription television services are conveniently designated pay per month, pay per view and wild card. In pay per month operation data encoded on the dual magnetic strips of the data card 12 designate one or more of the three channels and one month in which the data card 12 is valid. Upon acceptance of the data on the card 12 by the reader, the LED 80 is energized and lighted and the erase signal appears at the output terminal 48 of the processor circuit 46 for enabling the erase head 16 to erase the data encoded on the data card 12. When the data card is completely removed from the reader, the removal of the card is sensed by the switch 18 and the processor circuit 46 determines whether to enable the channel or channels designated in the encoded data for television reception. The data encoded on the card which is indicative of the month in which the card is valid is compared by a comparator 53 with data generated by the clock network 47 internal to the processor 46 and, as long as there is a correspondence between the two wherein the instantaneous time recorded by the clock 47 is within the month during which the card is valid, the channel or channels designated in the encoded card data are enabled.

When a channel is enabled, an enable signal appears at a respective channel enable output terminal of the processor circuit 46 and an enable LED indicator signal also appears at a corresponding output of the processor circuit 46. Hence when the first of three channels of the preferred embodiment of the invention is enabled, an enable signal appears at output terminal 90 of the processor circuit 46 and an LED energizing signal appears at output terminal 92 of the processor 46 to cause light emitting diode 94 to light. Similarly, when the second channel is enabled, an enabling signal appears at output terminal 96 to light the diode 98. When the third channel is enabled an enabling signal appears at processor output terminal 100 and a light emitting diode energizing signal appears at processor output terminal 102 to energize and light a corresponding light emitting diode 104.

Output terminals 90, 93 and 100 of the processor circuit 46 are each connected to a respective security device known to those skilled in the art for enabling or disabling television reception on the respective channel or for providing access to another electrically controlled service.

A switching circuit for controlling a security device suitable for use in subscription television systems which employ either an interference carrier security device 141 or an outdoor negative trap security device 143 is shown in FIG. 5. An enable signal from one of the outputs 90, 93 and 100 of the processor circuit 46 is applied to the base of a transistor 110 of a switching circuit through voltage divider action by resistors 112 and 114. The enable signal is simultaneously applied through resistor 116 to the base of a transistor 118, the emitter and base of which are biased by a 9 volt DC voltage applied through resistors 120 and 122 respectively. DC bias is also applied through resistor 124 to the collector of transistor 110 which is in turn connected to a diode 126 and resistor 128 to the base of a transistor 130. High frequency suppression of output

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signals at the collector of the transistor 110 is provided by a grounded capacitor 132 connected between the diode 126 and resistor 128. The emitter of transistor 130 is connected to ground through resistor 134.

The collectors of the transistors 118 and 130 are adapted to be connected to the security device 141 or 143 through a resistor 136.

When an enable signal is applied to the previously described switching circuit, a filter can be permitted to remove an interference carrier signal or prevent the signal blocking action of an outdoor negative trap. The enable signal can also be used to activate and deactivate other known switching circuits compatible with security devices presently known to the art including those used with synch suppression, STV (secure television) and MDS (multidistribution service).

A second mode of operation if the invention in a subscription TV environment is termed pay per view operation. In pay per view operation, the data encoded on the dual magnetic stripes 14a and 14b of the data card 12 can specify one, two, three or four time periods within the month in which the data card is valid. The time periods are specified both as to the specific time of the month they are initiated and by their respective durations which can be from one half hour to sixteen hours, each, in the preferred embodiment. The comparator 53 of the processor circuit 46 then compares the instant time data output of the clock 47 in the processor circuit 46 with the data encoded on the data card 12 indicative of the time period during which pay per view operation is to be enabled. Upon acceptance of the data card 12 by the reader, the LED 80 lights and the erase circuit is enabled to erase the data encoded on the data card 12 to prevent its reuse. By this technique the data, which can specify up to four periods of time during the month of validity, is stored in the processor circuit 46 for comparison with the instantenous clock data output to enable television viewing during the four periods.

Pay per view operation can be used in connection with pay per month operation. Where the two modes are to be used together, the pay per month data cards will have encoded on them four sub-periods of time during which viewing is not to be enabled as part of the normal monthly subscription service. Only if a pay per view data card is later inserted into the reader 1, which specifies one or more of the sub-periods as being permissible viewing time, can access to television programs be had during the sub-periods reserved on the monthly data card. By this method monthly service can be provided by subscription via a monthly data card which permits viewing on a single channel for the entire month except for certain predesignated sub-periods. Viewing during the predesignated sub-periods, which can be used to exhibit special broadcasts for which an extra charge is to be made, is then enabled by a separate data card, separately paid for, and intended to be read by the data card reader 1 only once during the month after which the data on the pay per view card is erased.

As the internal clock 47 within the processor circuit 46 provides output data indicative of current day and time, this information is compared by the comparator 53 with the data read from the monthly viewing card and additional data read from the pay per view card to determine whether or not an enable signal is to be provided on a specified channel at the current time.

Multiple pay per view cards can be used with each pay per view card specifying one or more of the reserved sub-periods in the monthly period for viewing

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Hence, if there are four special programs which are to be broadcast at predesignated times during the month, a subscriber can purchase a single data card 12 which will enable viewing of all four of the programs or he can purchase a datacard which will enable viewing of fewer than all four, e.g. one of the programs, and then later purchase one more additional cards to enable viewing of the remaining special programs. The cumulative sum of all of the time periods encoded on the multiple pay per view cards should not exceed the total number of time periods reserved during the monthly period of validity.

A third mode of operation for which the processor circuit 46 can be adapted is termed wild card operation. A data card 12 encoded for wild card operation is preferably encoded with data specifying the month of validity and a sub-period time duration. The initiation of the sub-period is not limited to any particular time during the month but takes place immediately upon insertion of the data card 12 into the reader 1 during the month 20 validity. Hence, a data card may specify two hours of operation during the month of January. A subscriber desiring to view two hours of television broadcast during the month of January would insert the data card 12 into the reader at the time he wished to view a broadcast and the processor would then provide an enabling signal to the channel whose designation was encoded on the data card 12 for a continuous period of two hours after which the enabling signal would be terminated.

In the preferred embodiment of the invention, three channels of television viewing are provided for, each of which can be separately controlled by separate enable signals and respective security circuits. The three security circuits can be the same, e.g., all can be of the interference carrier type, or any two or all three of them can be different, e.g., one can be interference carrier, another synch suppression and the third STV.

It is to be appreciated that the foregoing description is of a preferred embodiment of the invention suitable for use in providing access to subscription television services for predetermined periods of time. However, the invention has application to the provision of access to virtually any electrically controlled service for a predetermined period of time. For example, the apparatus of the present invention could be used in connection with a security device which enables or prevents entry of a person to a facility such as a building or a transportation vehicle such as a train. Hence, access to a library could be regulated by a subscription basis by the mere furnishing of properly encoded data cards. Commuters on metropolitan subways or rail systems could purchase data cards on a monthly basis which permit access to the transportation system at preselected periods of time during the month. For example, data cards permitting access on week days during rush hour periods could be sold at one rate while data cards only permitting access on off-peak hours or during weekends could be sold for a lesser charge.

Although the invention has been described in connection with a preferred embodiment wherein three enable signals can be independently provided for controlling three channels of operation each of which can function in one of three modes, it is to be understood that within the teachings of the invention apparatus can be constructed for enabling fewer or greater numbers of channels than the three of the preferred embodiment. Moreover, while the modes of operation have been described in connection with a basic monthly renewable time

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period, other time periods of longer or shorter duration than the monthly period can be employed within the teachings of the invention sub-periods more than four in number and of duration beyond the ½ hour—16—hour range can also be provided within the teachings of the invention. Hence, it is to be appreciated that variations and modifications can be made to the preferred embodiment without departing from the spirit and scope of the invention which is set forth in the following claims

What is claimed is:

1. Apparatus for providing access to an electrically controlled service for predetermined periods of time comprising:

a record medium adapted to have encoded thereon data indicative of a definite time period during which access to said service is to be permitted,

a reader adapted to receive said record medium and store the data encoded thereon,

said reader including a sensor for sensing the presence of said card therein and a housing having two closely spaced parallel plates and a plurality of posts disposed between said parallel plates to form a channel for slidably receiving said medium and guiding said record medium toward said sensor while preventing skewing thereof,

a processor including a clock network having an output signal indicative of instantaneous time,

a comparator for comparing the data stored in said reader with said clock output signal, and

a security control device operable in at least two states, one of said states permitting access to said service and the other of said states preventing access to said service, said security device being responsive to said comparator for permitting and preventing access to said service as a function of the data encoded on said record medium.

2. Apparatus according to claim 1, wherein said record medium comprises dual magnetic stripes adapted to be encoded in CRB and said processor includes a CRB decoder.

3. Apparatus according to claim 1, wherein said sensor includes a mechanical switch having an actuating arm normally disposed in the path of said card, said arm being movable out of the path of said card in response to insertion of said record medium into said reader for actuating said sensor to provide an output signal indicative of the presence of said card in said reader.

4. Apparatus according to claim 1, wherein said security control device is compatible with outdoor trap security.

5. Apparatus according to claim 1, wherein said security control device is compatible with interference carrier security.

6. Apparatus according to claim 1, wherein said security control device is compatible with synch suppression security.

7. Apparatus according to claim 1, wherein said security control device is compatible with STV.

8. Apparatus according to claim 1, wherein said security control device is compatible with multidistribution service.

9. In apparatus for providing access to an electricontrolled service for predetermined periods of time having a record medium adapted to be encoded with data indicative of a definite time period during which access to said service is to be permitted, a processor for controlling access to the service in response to the data on said card and a security device responsive to said processor,

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the improvement which comprises a card reader including

a top plate,

a bottom plate disposed in parallel spaced relationship to said top plate,

a plurality of spacer members connected to said top and bottom plates, the area bounded by said top and bottom plates and two of said spacer members being substantially congruent to the cross-section of said record medium for slidably receiving said record medium while preventing skewing thereof, and

a plurality of magnetically responsive sensors disposed adjacent said channel for sensing signals corresponding to the data encoded on said record medium.

10. Apparatus according to claim 9, further comprising card sensor means for sensing the presence of a card in said channel, said card sensor means having one output signal when said card is present in said channel and another output signal when said card is not present said channel.

11. Apparatus according to claim 10, wherein the card sensor means includes a switch having an actuating arm normally disposed in said channel, said actuating arm being urged out of said channel as said card is inserted therein, and an electrical circuit connected to

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said switch for providing said one output signal when said actuating arm is disposed in said channel and said other output signal when said actuating arm is urged out of said channel.

12. Apparatus according to claim 9, further comprising an erase head mounted adjacent said channel in alignment with said magnetically responsive sensors, said erase head being responsive to said processor for erasing the data encoded on said record medium in response to the storage of the data encoded on said record medium by said processor.

13. A method of providing access to an electrically controlled service for a predetermined period of time comprising encoding a record medium with data indicative of a predetermined period of time with a CRB encoding format, reading said data indicative of the predetermined period of time encoded on said record medium with a CRB decoder,

comparing the data indicative of the predetermined period of time with data indicative of present instantaneous time, and

enabling the security device to permit access to the electrically controlled service only when said present instantaneous time is within said predetermined period of time

*   *   *   *   *

EXHIBIT F

US005291554A

United States Patent [19]

Morales

[11] Patent Number: 5,291,554

[45] Date of Patent: Mar. 1, 1994

[54] **SHARED-PRICE CUSTOM VIDEO RENTALS VIA INTERACTIVE TV**

[75] Inventor: Fernando Morales, Reston, Va.

[73] Assignee: TV Answer, Inc., Reston, Va.

[21] Appl. No.: 932,257

[22] Filed: Aug. 19, 1992

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 889,626, May 28, 1992.

[51] Int. Cl.⁵ H04N 7/167
[52] U.S. Cl. 380/5; 380/10; 380/23
[58] Field of Search 380/5, 10, 23

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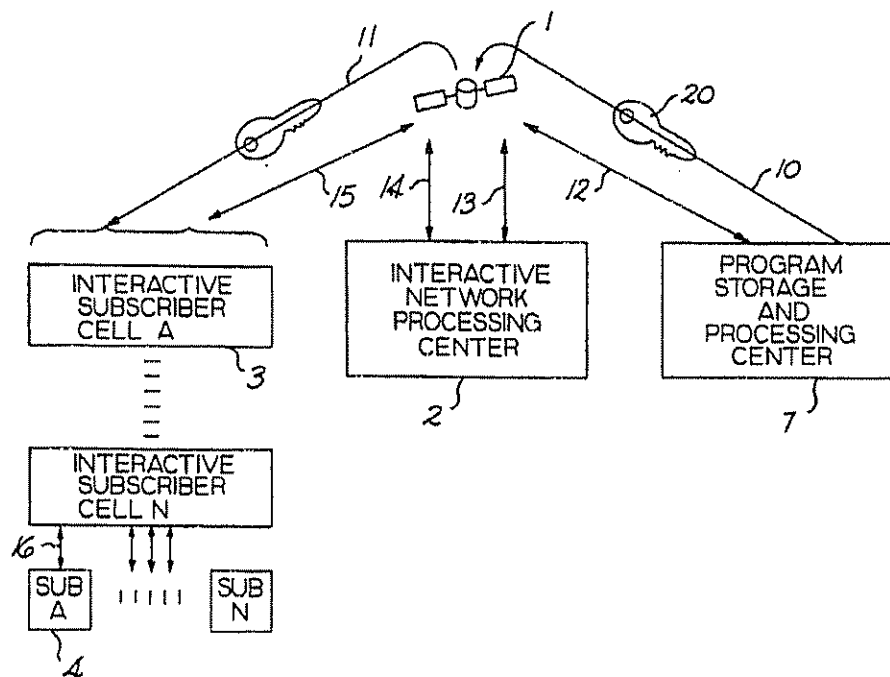|		
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Primary Examiner—David C. Cain
Attorney, Agent, or Firm—Laurence R. Brown

[57]   **ABSTRACT**

Movies and like video programs are distributed electronically from a program storage and processing center in encrypted format over a satellite channel upon custom order for private viewing of one paying subscriber or a small group of subscribers. Thus, charges may be shared to lower the processing, transmission and royalty costs involved for custom rental of unscheduled programs available from a large storage library facility. The transactions for ordering, paying and receiving a decryption key are made over a two-way interactive wireless satellite network in communication with a nationwide network of subscribers and the video program storage and distribution center. Software controlled subscriber stations permit the monitoring and control of the private viewing conditions to meet various copyright and recording criteria. The transmission is preferably in digital format, and thus may be easily stored in encrypted format for a single private viewing session at a time chosen by the subscriber. The interactive network provides optimal communication of catalog choices, pricing, delivery conditions, automated storage, viewing schedules, payment, confirmation of orders, and conformation to change in business procedures or delivery conditions. Thus, special purpose single-shot local control software may be downloaded from an interactive network processing center to the ordering subscriber station for implementing an order for a private viewing session of a desired movie or other video program

15 Claims, 5 Drawing Sheets
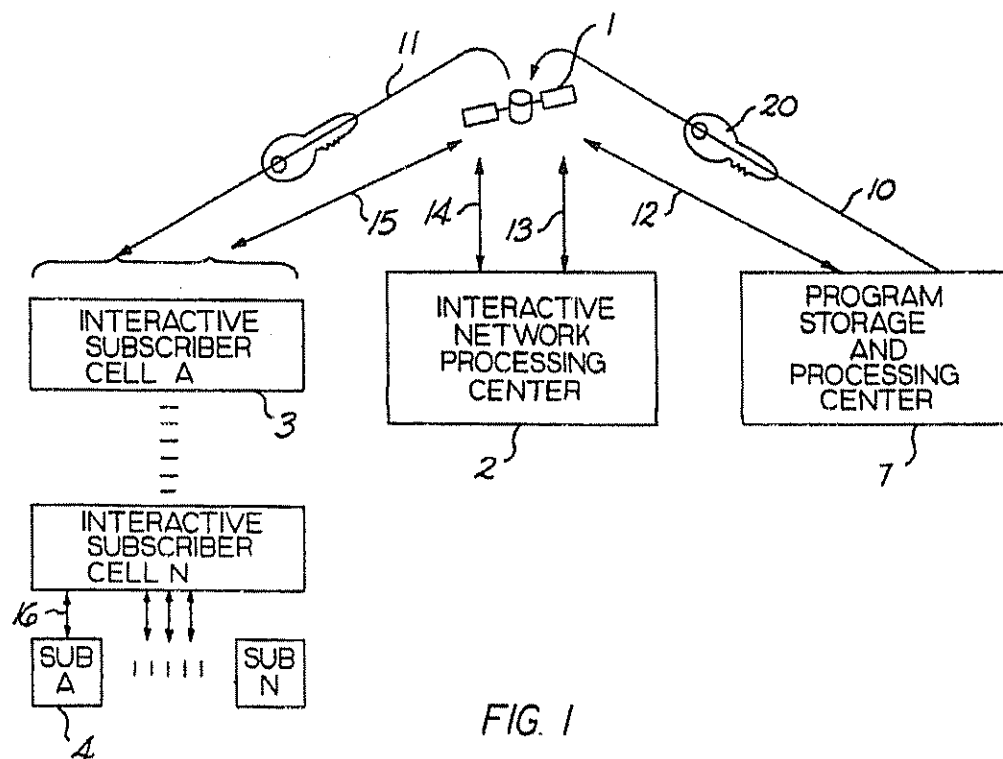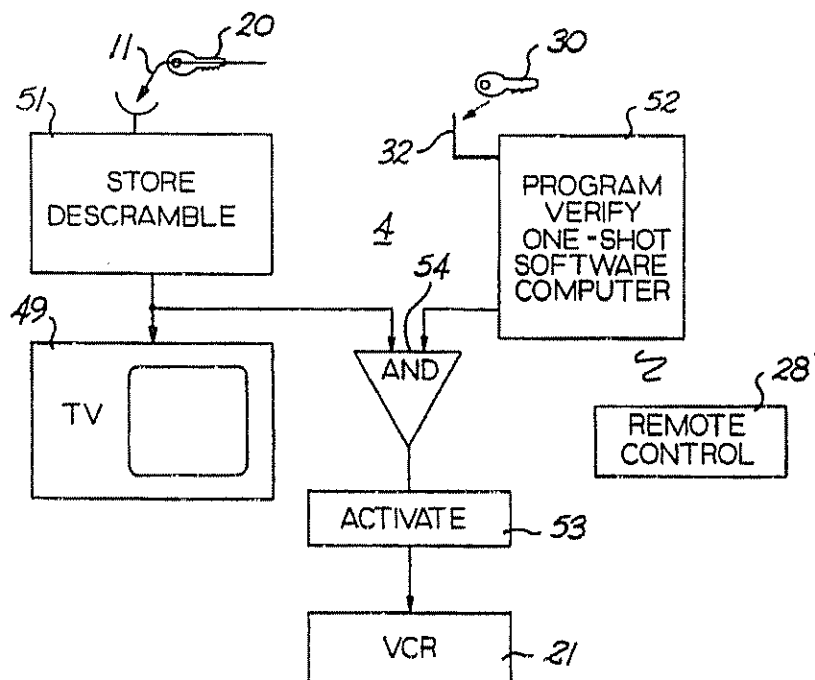
FIG. 1

FIG. 4

FIG. 2

FIG. 3

CATALOG MENU
PI3 GONE WITH THE WIND
3HRS 45 MIN.

X   VCR COPY $75.00 MORE
A   SOLO $300.00
B   12 $30.00
S   125 $3.00   63

DATE _____ TIME _____

A

PROGRAM SCHEDULE
PENDING
GONE WITH THE WIND
(564) EST AUG 15 92

SCHEDULED

OLYMPICS SEPT 18 22 92
CH 42   FULL TIME

___
___
___

B

PROGRAM SCHEDULE
GONE WITH THE WIND
CH49   AUG.13 92
7 45PM LIVE ONLY

___
___
___

C

FIG.5
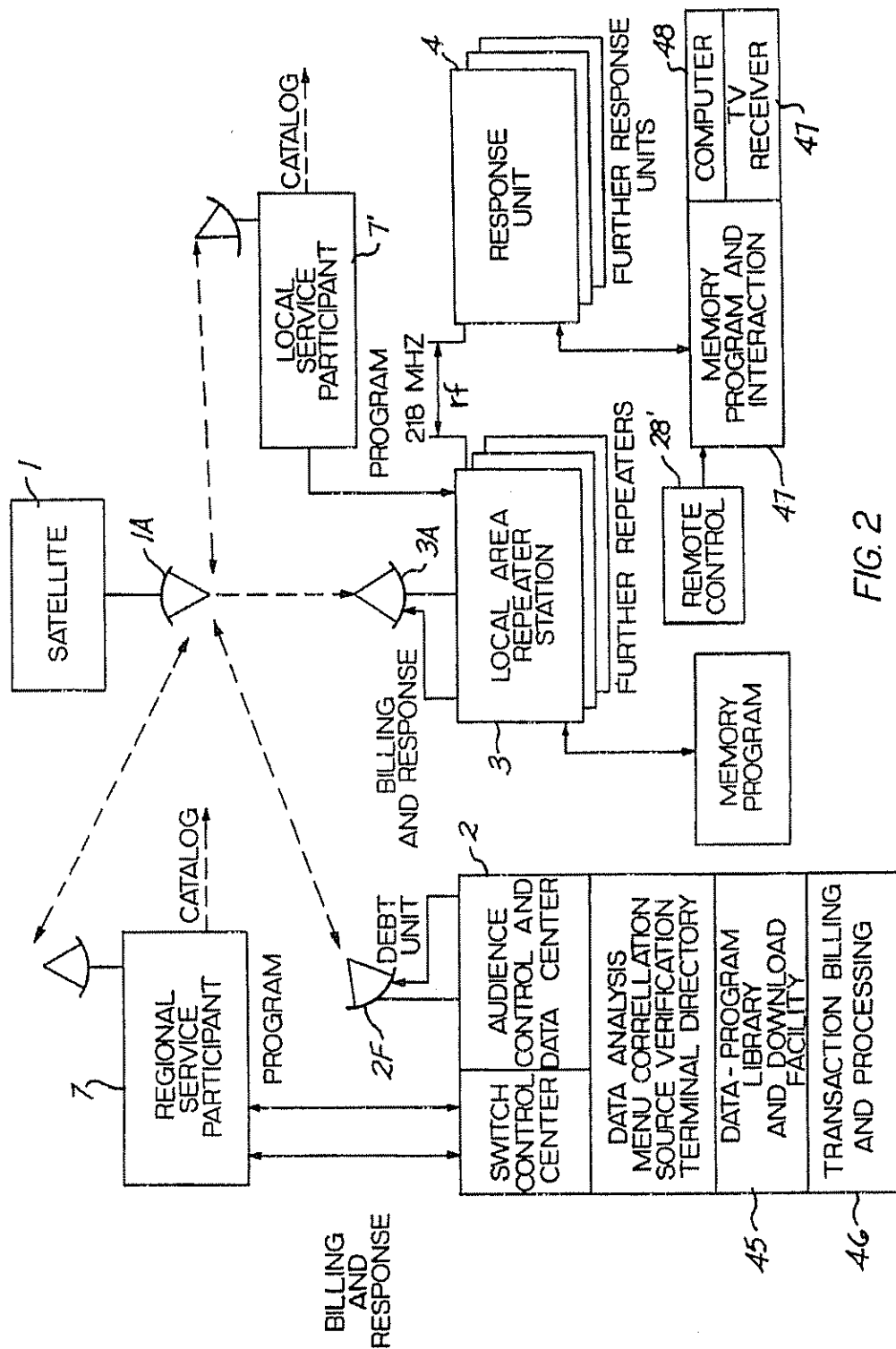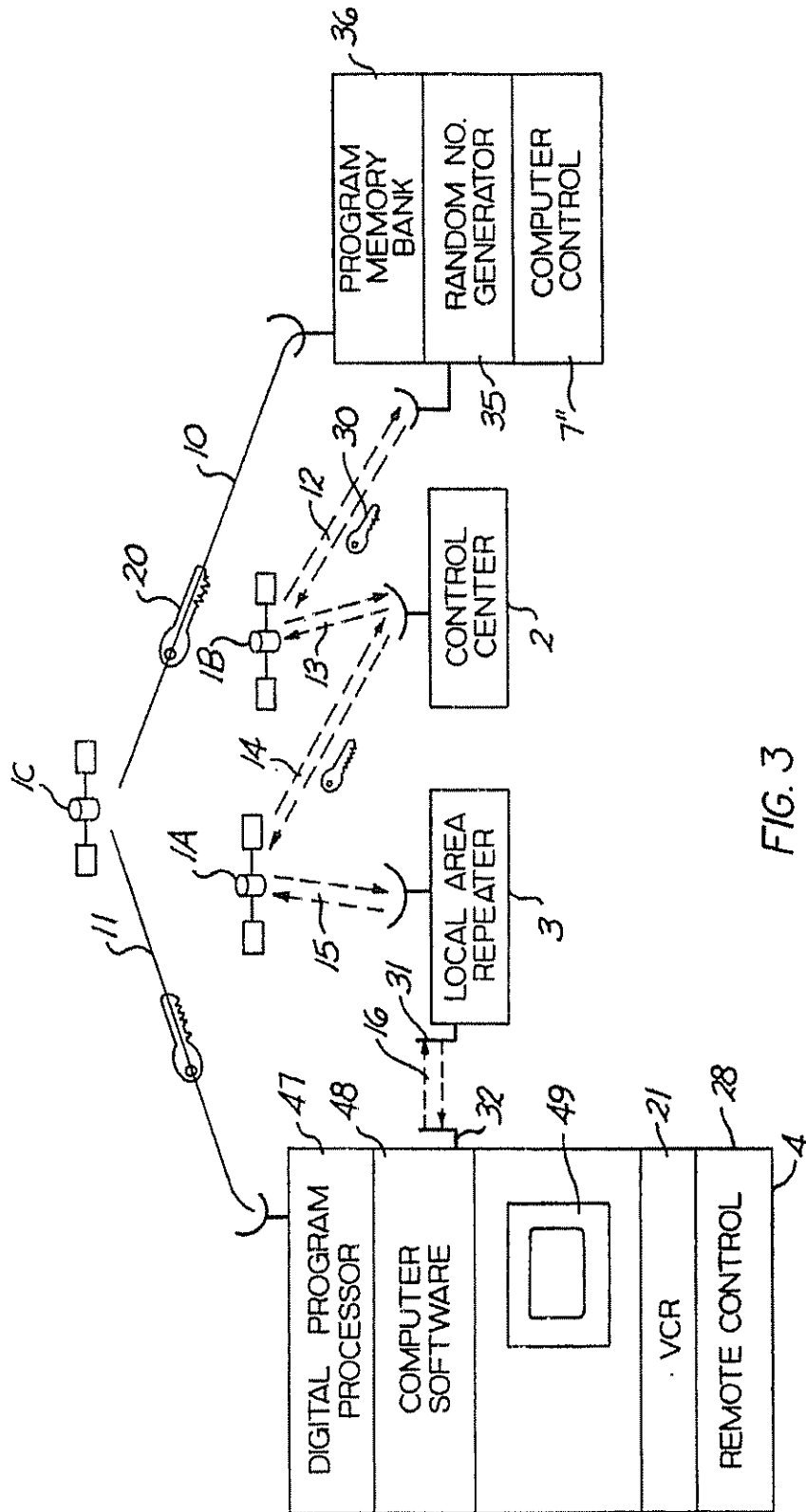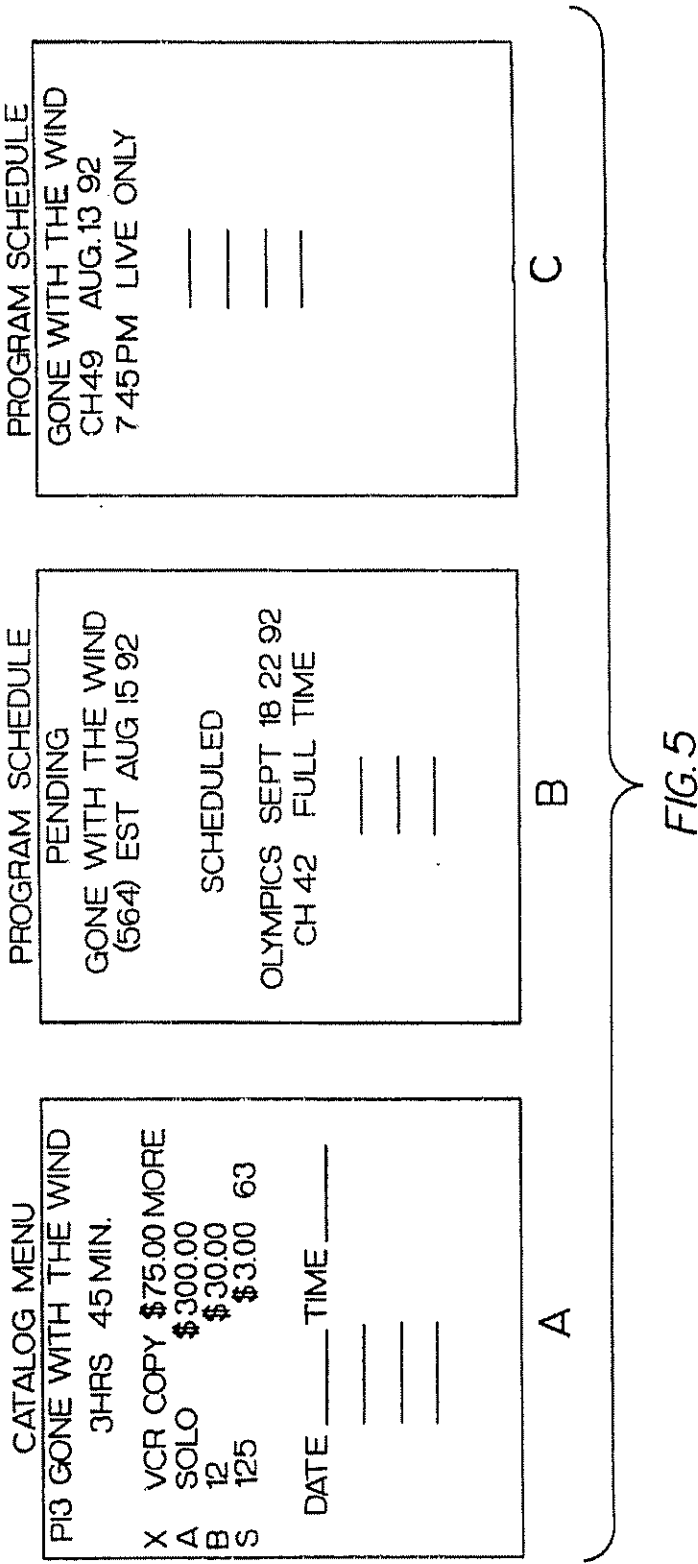
FIG. 6

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SHARED-PRICE CUSTOM VIDEO RENTALS VIA INTERACTIVE TV
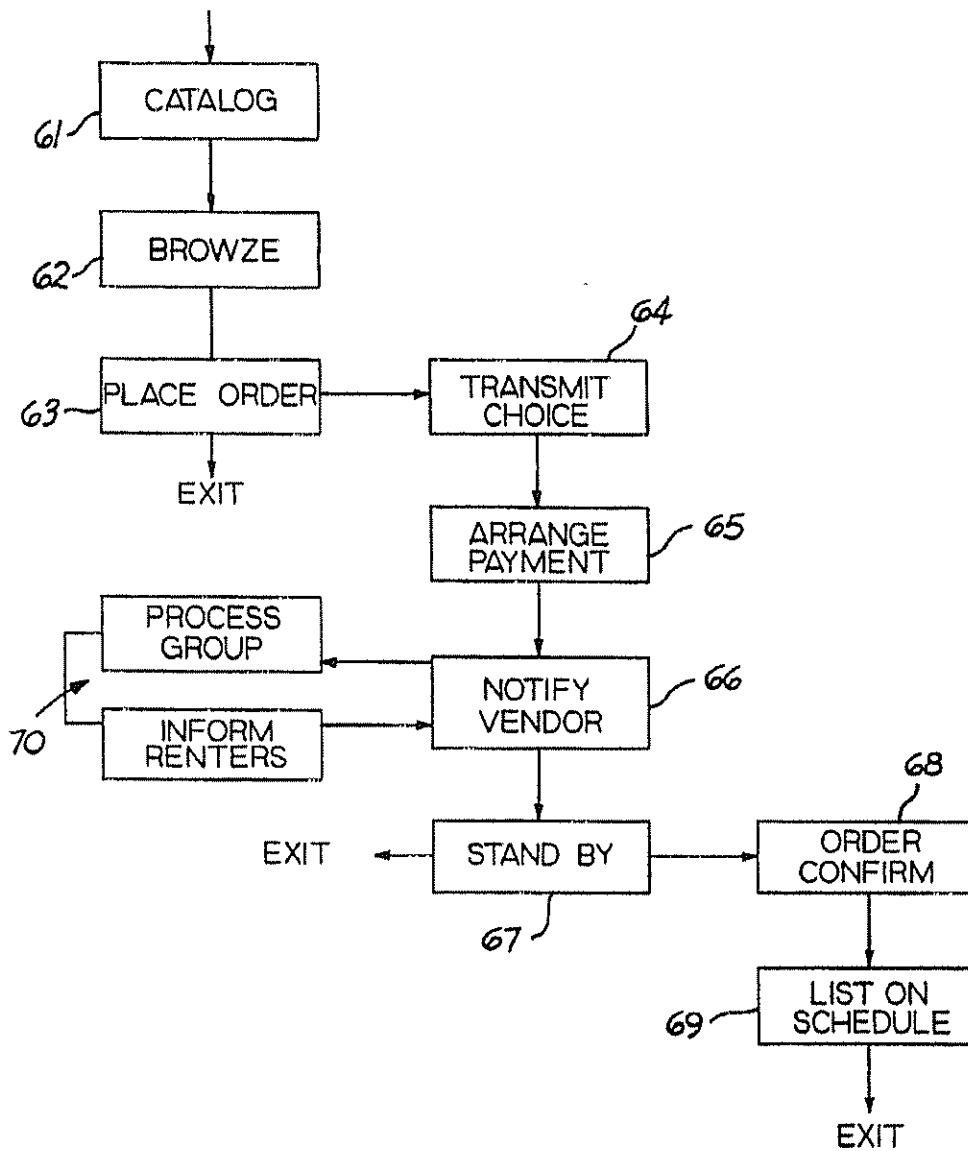
This is a continuation-in-part of the co-pending application Ser. No. 07/889,626, filed May 28, 1992 for Software Controlled Interactive Video Network.

TECHNICAL FIELD

This invention relates to interactive video data processing systems and more particularly it relates to rentals of video programs to home subscribers for display on a TV set.

BACKGROUND ART

Pay per view television systems are now well known in the art. Thus, by some interactivity by the viewer, payment is arranged for a designated program and access is given to the viewer, generally in the form of a deciphering key to a scrambled transmission. In such systems copyright protection is also well known, so that one-time viewing without replay is assured, generally by preventing recording on a video recorder or by monitoring the viewers equipment for re-runs. U.S. Pat. No. 5,016,272, May 14, 1991 to J. R. Stubbs, et al. for HOME VIDEO SYSTEM describes a cable system for making available various programs for home viewing.

In the U.S. Pat. No. 4,890,321, Dec. 26, 1989 to N. Seth-Smith, et al. for COMMUNICATIONS FORMAT FOR A SUBSCRIPTION TELEVISION SYSTEM PERMITTING TRANSMISSION OF INDIVIDUAL TEXT MESSAGES TO SUBSCRIBERS, encrypted messages of limited content are sent over a satellite communication channel to an authorized receiver station. This sort of system as exemplified in related U.S. Pat. No. 4,866,770, Sep. 12, 1989 is capable of processing business transactions between a company home office and several branch offices.

However, such prior art systems are in general operable only for reception of limited length messages, or for viewing preannounced programs of greater length that are available at scheduled times for large audiences such as first run movies or sports events, and leave little flexibility for the viewer to make custom program choices at preferred viewing times. Thus, there has not been prior motivation to develop a comprehensive system for nationwide distribution upon request to individual homes of movies and like program materials of a cost effective nature for bearing the considerable cost of the several hours of air time required for custom order of a movie, and the peripheral costs of individual storage and processing of a comprehensive program source.

Even if such systems were available in the prior art, they would require at the local subscriber homes such expensive and complex intercommunication equipment that the subscriber station cost would be excessive. This is particularly true if adequate controls are in effect for protecting private communications before release with assurance against piracy. Also local subscriber systems do not conventionally have adequate communication capabilities with the program source outside of telephone line connections.

Furthermore, there has been no comprehensive custom order system for home view of movies and the like for sending the movies only to one or a few individual subscribers who wish to schedule custom ordered programs at a delivery time outside published broadcast schedules. Nor has there been facilities for downloading

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to the subscriber adequate information and local system control functions for placing and implementing an order. Technology changes are so rapid that there has been difficulty enabling the subscriber's facility to co-act in a program delivery system without obsolescence.

It is now feasible to provide nationwide two-way communication for interactive video data services over a satellite network for access by very large audiences as set forth in U.S. Pat. No. 5,101,267, Mar. 31, 1992 to Fernando Morales-Garza for WIDE AREA REAL-TIME T-V AUDIENCE POLLING SYSTEM WITH LOCAL AREA STATIONS LINKED BY SATELLITE. Thus, there is now a very large potential nationwide audience for requesting custom ordered video programs for home display with an interactive home response unit. Also this satellite system, as improved by that of the parent application, provides facilities for privately communicating with individual ones of a very large number of nationwide subscribers for exchange of information and for comprehensive control of a subscriber station to process external data in accordance with payment and operating condition restrictions imposed upon the transfer of data.

It is therefore an object of this invention to provide a satellite transmission system for renting program materials such as full length movies from a comprehensive warehouse of materials that can broadcast special programs upon request to individual subscribers.

It is a further object of the invention to provide an interactive video data processing system with a nationwide audience having the capacity to deliver custom ordered full feature programs such as movies to individual subscribers upon demand.

Another object of the invention is to provide a system for downloading custom ordered movies and the like from a central storehouse facility to one or more selected subscribers in a nationwide network together with adequate subscriber system controls for decrypting, controlling unauthorized copying, notifying the subscriber of delivery times, confirming an order and other related interactive communications related to the transaction.

A still further object of the invention is to provide at a reasonable price custom rental of unscheduled movies and full length programs to home television viewers.

Other objects, features and advantages of the invention will be found throughout the following description, claims and accompanying drawings.

DISCLOSURE OF THE INVENTION

Movies and other featured video programs are stored in a storage and processing rental center for encrypted electronic nationwide satellite distribution upon demand by a single subscriber, or a small group of subscribers sharing costs, for a private viewing. By means of the cost sharing feature, the costs for the private viewing may be shared to provide competitive rental fees for processing, transmission and royalty costs involved for custom rental of unscheduled programs at the convenience of the subscribers.

Transactions for ordering, paying, receiving a decryption key, scheduling and providing a receipt, etc. are made over a two-way interactive wireless satellite network in communication with a nationwide network of subscribers and the video program storage and distribution center. Software controlled subscriber stations in the interactive network permit the monitoring and control of the private viewing conditions at the subscriber's

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home television set to meet various copyright and recording and sales policy criteria. Basically the subscribers are interactive network participants who have the flexibility with a relatively low cost interactive television control unit to process orders and privately view a rented video program, all without additional or special purpose hardware facilities. This is achieved in a software controlled subscriber station, by means of downloading software controls for the movie rental transaction and implementation from the network central control facility.

The video program is preferably transmitted in digital format, and thus may be easily stored at the subscriber station in encrypted format for a single private viewing session at a time chosen by the subscriber. Thus, special purpose single-shot local control software may be downloaded from an interactive network processing center to the ordering subscriber station for implementing an order for a private decrypted viewing session of a desired movie or other video program, where the software self destructs after the single viewing, thereby conforming with licensing of copyrighted materials for a single in-home viewing session.

The interactive network provides optimal communication of catalog choices, pricing, delivery conditions, automated storage, viewing schedules, payment, confirmation of orders, and conformation to changes in technology, business procedures or delivery conditions between the storage and distribution source and the subscriber station. The interactive network control center is already fashioned to interactively communicate between vendors and subscribers and to process payments. Its computer controlled capacity can implement new procedures with appropriate software programming. Thus, there is little added hardware necessary in the aforesaid already known software controlled interactive network facility for administrating the present system. Accordingly, an efficient system is provided wherein the movie vendor need not implement a system or require hardware purchases for reaching and communicating with a very large body of potential subscribers, or for servicing rental orders. The rental center simply arranges for encrypted broadcast over available satellite channels of ordered programs with notice to the customers of acceptance of the order and the broadcast time and channel. This is a routine matter in the basic background interactive system already set up to interactively react with various vendors of services and goods.

BRIEF DESCRIPTION OF THE DRAWINGS

In the accompanying drawings, wherein similar reference characters in the several views relate to similar features for facilitating comparison, and wherein:

FIG. 1 is a general system block diagram of the video data exchange network afforded by this invention,

FIG. 2 is a more detailed block diagram illustrating the interactive role of the network control center in communicating and implementing movie rentals in accordance with the invention,

FIG. 3 is a preferred block diagram embodiment showing in greater detail the video data exchange network of this invention,

FIG. 4 is a fragmental block diagram embodiment illustrating the private viewing of a movie in accordance with this invention,

FIG. 5 shows a representative set of menus presented on the subscriber's television screen during the course

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of the ordering and implementing of a private movie viewing, and

FIG. 6 is a generalized data flow block diagram illustrating the role of software in the ordering and implementing of a movie for private viewing in accordance with this invention.

THE PREFERRED EMBODIMENTS

This system, as seen from FIG. 1, provides for two parallel wireless communication channels 10, 11 and 12, 13, 14, 15 over one or more satellites 1 respectively for transmitting video programs and interactive communications between the program storage and processing center 7, source of movies and like video program materials, and the subscriber stations 4, from which stored programs may be custom ordered for private viewing as unscheduled events. Local subsets of subscribers 4(A–N) communicate in the network by means of the various regional cells 3, so that a nationwide network can process concurrent communications from a large number of individual subscribers in substantially real time as set forth in said U.S. Pat. No. 5,101,267.

The key 20 represents encryption of the video programs broadcast in one direction (noted by the arrowheads) from the program processing center 7 and satellite 1 for reception by the cells 3 and distribution to a selected subscriber station 4. Thus, the satellite 1 may efficiently transmit a large number of channels having video production bandwidths, with several set aside for unscheduled video transmissions of the nature herein transmitted to give prompt turnaround times between verified orders and broadcast times. The cells have the capacity to receive the satellite channels and relay programs locally to the subscribers, thus precluding the necessity for satellite reception hardware by each subscriber.

The interactive two-way communication links 12–16 between cells 3 and subscribers 4 permit full communications over the interactive network stations, cells and centers, and typically employ the technology of U.S. Pat. No. 4,591,906, May 27, 3986 of Fernando Morales-Garza, et al. for WIRELESS TRANSMISSION FROM TELEVISION SET TO THE TELEVISION STATION, at least in the link 16. In this manner, each of a very large number of subscribers 4A–N located in widely dispersed cell regions is individually identifiable for two-way digital communication. The communications may be carried implicitly in regularly scheduled television programs, or may be carried separately on a narrow band width modulated carrier channel, each of which is compatible with transmission over a communication channel of the satellite 1. Thus, the basic requirements for the various functions and features of the present invention found hereinafter are set forth in this simplified system configuration.

For understanding of relevant processing features afforded the interactive network control and data center 2 of the current invention, reference is made to FIG. 2, excerpted from the foregoing parent application, the remainder of that disclosure being incorporated herein by reference. Note that there is an interactive control unit 47, having memory and software programming for associated data processor 48 and television receiver 49 incorporated in the subscriber home response units 4. The interactor feature 47 provides comprehensive interaction with the data center 2 for exchange of messages, data and program software. The memory feature 47 is sufficient for downloading of digital data including

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video movies and programs in digital format. Auxiliary local response unit equipment (not shown) includes video recording equipment(VCR) for interactively recording programs in conventional television format. Among the usual interactive home unit features are the display of menus in a menu driven interactive mode as directed by selection from a manually operated remote control unit 28. The software programs by way of computer 48 make the subscriber station response unit universally adaptable to different features and control functions in the interactive communication mode, and in a local operating mode. The local operating mode for example includes the ability to display program schedule menus from which programs may be automatically be tuned in from their respective channels for viewing or recording on a VCR. Menus also can be presented by TV advertisers for interactive participation in polls and purchase transactions. Catalogs and other data may be ordered down from the data center 2 for viewing. Thus, typically a simple menu choice at the response unit 4 can enter an order, arrange for credit card payment, receive verification of the order and send a local or regional service participant 7 the delivery address.

In this interactive system environment, features particularly relevant to the present invention are the downloading of data and software programs 45, and the transaction billing and processing 46 features, which implicitly include the data center ability to communicate with individual subscribers 4 and vendors 7 with privacy assurance message encryption. All this covers a nationwide audience of subscribers made possible by the two-way wireless communications through satellite 1.

In FIG. 3, the subscriber response unit 4 is shown in block diagram format with an accompanying TV receiver 49, computer 48 with software controls, a local control system for processing digital programs 47, a remote control unit 28 and a VCR unit 21. Note that the two-way communication links 12–16 are broken down into two single direction channels identified by arrow heads to show the communicating direction. The keys 30 represent the downloading of a unique deciphering key in response to a completed rental transaction for each custom ordered program for private viewing, as allocated by the random number generator 35 at the program distribution computer controlled center 7". With the deciphering key 20 removed from the program, and transmitted at a different time, and encrypted in a different manner in the separate interactive channel communications, the security against piracy is formidable.

The communication links 10–15 may use different satellites 1A, 1B, 1C, or equivalent wireless communication links of a single satellite to meet the needs of the various communicators and to assure enough channels in the separate satellite 1C for custom viewing without significant waiting time delays. The link 16 between the repeater cells 3 and the subscriber home units 4 is preferably a 218 MHz link conforming with FCC standards for interactive video data service activities.

This system accordingly permits the subscribers to determine what programs are available from the vendor's memory bank 36, to process a custom order for receiving a private viewing over communication link 10–11, and to decrypt using key 30 and privately view the ordered program at home on the TV receiver 49. However, the system contains other features pertinent to the downloading of software programs, which follow.

In FIG. 4 is a typical embodiment of the subscriber home response unit 4 exhibiting the feature known in the art as "copyright protection" for monitoring the conditions under which a downloaded program licensed for restricted use conditions may be viewed. In the comprehensive system of this invention various types of video rental or purchase agreements may be processed. However, a typical rental agreement for a current first run movie or sports event is a one-shot private viewing of an ordered program which is paid for in advance through a credit card transaction or the like. With subscriber access to program materials, which could be converted for unauthorized use of a downloaded program such as first run movies or currently unscheduled major sporting events available from the program source.

The program downloaded on communication link 11 encrypted with key 20 is stored at the subscriber station either in digital, analog, encrypted or decrypted format in accordance with a preferred style of system operation. Assume for this embodiment that the encrypted program is stored at 51 to be descrambled with key 20 under control of software section 52 at the viewers convenience, as commanded from the remote control unit 28. To assure a single viewing, the one-shot software of section 52 is downloaded from the interactive data control center. This software is programmed to self destruct and erase after one viewing. Although a software expert might divert and pirate a single program by writing special software for the subscriber home unit computer, the time taken and cost for decrypting would be so high compared to the cost of rentals that there would be little motivation. Furthermore, the software from the data center can be changed frequently, and the random number key 30 is unique to a single program, so that in effect there is a maximized security in this system against piracy. If permitted by the prepayment of a recording license fee, for example, the software can also activate via control section 53 the VCR 21 for recording the program in decrypted analog format as indicated at AND circuit 54.

This system affords ample facility for communications between the program vendor and the subscriber, and full interactivity of the subscriber at the home unit. The interactive menu displays of FIG. 5 represent typical interactive features of the system. Thus menu 5A may be interactively viewed while browsing through available catalog offerings of rental programs. The typical classical movie "Gone With The Wind" is illustrative of a choice that may be offered. The various options A, B, S, X are shown for placing an order by menu choice. In this case the VCR copy option X is given with its price addition to the custom order private viewing prices A, B and S. The shared-price feature of this invention is illustrated for groups of twelve and 125 participants.

Even with efficient and automated electronic systems and satellite transmission channels, the peripheral broadcast time, license fee and processing costs for the private viewings are significant enough that the audience for a private solo viewing is small, particularly if licensed only for home use. Of course, group usage for private showings may be licensed as well. The advantage of a solo order is that a preferred date and time viewing becomes more feasible, in essence depending only upon the distribution of traffic on the satellite channels operated by the program vendor. Note that

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the preferred date and time may be interactively entered.

However, to accommodate larger audiences, shared-cost options in multiple home groupings are available, such as twelve member groups B or 125 member groups S (already on order with 63 participants). The catalog menu may be kept updated currently if downloaded for browsing from the data center, thus to include such other information as expected viewing date. The software controlled computer at the data control center will process the orders and communicate with the vendor to arrive at a viewing schedule when the group is assembled.

The menu of FIG. 5B will reflect any pending and scheduled programs monitored by the subscriber station computer under control of its interactive software options. Thus, it may be seen that immediately after placing an order, the "Pending" selection "Gone With The Wind" is listed with the updated group count and estimated time of scheduling. A fully scheduled program will identify the channel and date as illustrated by the "Olympics" entry. Interactivity options at the subscriber station will usually permit these programs to be automatically recorded when received for viewing at the subscriber's timing. As seen on the updated schedule of FIG. 5C, the time and channel is displayed for the "live only" single shot performance private viewing that has been ordered. In such cases the local software provides for processing the decryption while the program is being viewed. A timed reminder alarm may be sounded at the start of the program

In the present system, the advantages of software-computer control of interactivity are significant. For example, there is no special hardware cost to participate in the program rental system of this invention either at the subscriber station or the central data control station. The central station with a nationwide audience thus can provide software for system operation and downloading into the subscriber station at low peruse cost to the participants, and the processing fees for the various communications are reflected in the rental prices agreed upon, if not already a part of an optional feature licensing agreement with the central data system by the subscriber. In such cases, a discount figure may be included on the pricing menu for the subscriber's information.

The software downloaded from the interactive data control center for implementing the subscriber transaction for rental of a video program in accordance with this invention can take various forms and include different options. It is readily within the skill of the art to produce the software to implement the features disclosed by this invention. Depending upon the local subscriber unit interactivity features incorporated in a conventional operating protocol, the local subscriber software may either be integrated, or replaced with an overriding rental transaction program. In any event, the generalized block flow diagram of FIG. 6 is illustrative of the combined subscriber station and interrelated data control center software which converts a software controlled interactive subscriber system into a special purpose system for providing the desirable operation features in accordance with this invention

Thus, if a current catalog of available rental programs is requested for downloading from the data center at step 61, it may be browsed at 62 to determine if a rental order is to be placed. The catalog may have available rentals listed in a format of the nature of FIG. 5A, for example, from which an order is placed at step 63. If no

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order is placed then the program is exited. Otherwise the choice is transmitted back to the data center for processing at step 64. After payment is verified and set aside at step 65, the vendor is notified at 66. The step 65 may include at the data center provisions for filling a group order before fully notifying the vendor with information including update of the catalog to permit browsers to join the groups being formed, and downloading of communications to the subscriber for updating local program schedules. Thus the processing loop 70 is provided.

Because of the real time wireless interactive communication network that does not have to confirm through telephone exchanges, the standby step 67 can await for an immediate confirmation of the order and scheduling of viewing time from the vendor at steps 68 and 69 to be communicated and downloaded to the ordering subscriber through the interactivity data control center.

The data control center software before the notify vendor step 66 may defer to the group assembly software loop 70, which keeps the purchaser aware of progress and postpones the final vendor notification of a scheduled viewing time after the necessary number of group members make verified purchase transactions. It is clear that the software will be written to conform with the local subscriber station status, which is maintained as a matter of record at the central station as to features including credit card payment status, identification for private connection for transfer of the decoding key at step 68, etc.

Therefore this invention provides improved systems and methods for electronically renting video programs available from a program storage center for custom viewing at a subscriber's home television set. Accordingly those features of novelty setting forth the nature and spirit of this invention are defined with particularity in the following claims.

I claim:

1 An interactive wireless video data exchange network, comprising in combination

a plurality of separated subscriber stations located in different geographic areas having facilities for viewing video programs,

a video program storage and processing center for providing selected unscheduled video programs to individual ones of the subscriber stations for viewing,

distribution means for transmitting said video programs over a satellite network between said program center and said subscriber stations in a format for storage at a requesting subscriber station,

an interactive network processing center for interactively communicating with the subscriber stations and the program center, and

interactive communication facilities at the subscriber stations comprising a television viewer including means for interactively processing and implementing wireless transactions with the program center and storing selected video programs for private viewing.

2. The interactive network of claim 1 further comprising:

a set of geographically separated video processing cells, each for communicating interactively with a local subset of said subscriber stations and said interactive processing center, and

communication means at the video cells for processing communications between individual ones of the

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subscriber stations in its local subset and the inter-
active network processing center.

3. The interactive network of claim 1 further com-
prising,

order processing means at the subscriber station for
custom ordering of and payment for a selected
program stored at the program processing center
for private transmission.

4. The interactive network of claim 3 further com-
prising, facilities for accumulating from different partic-
ipating subscriber stations a predetermined number of
custom orders for a particular stored program at a cost
payment shared by the participating subscriber stations
and for private transmission of said particular stored
program to authorized participating stations at a prede-
termined time.

5. The interactive network of claim 1 further com-
prising,

separate wireless satellite communication channels
for interactively communicating and distribution of
said video programs, and encryption means for
encrypting each private viewing of a video pro-
gram with a unique encryption key.

6. The interactive network of claim 1 wherein said
distribution means further comprises means for trans-
mitting said video program in digital format for local
storage by the subscriber.

7. The interactive network of claim 1 wherein said
interactive communication facilities at the subscriber
stations further comprise subscriber station interactive
control means including a software controlled data
processor, an interactivity control system operated by
said software controlled data processor, and means for
changing software programs for implementing a diverse
range of interactive functions.

8. The interactive network of claim 7 wherein said
interactive network processing center further com-
prises means for downloading software programs to
individual subscriber stations.

9. The interactive network of claim 8 further com-
prising,

software downloaded from said network processing
center to a requesting one of said subscriber sta-
tions providing for limited private viewing condi-
tions at the subscriber station of a custom ordered
program distributed over the satellite network
from said program center.

10. The interactive network of claim 9 further com-
prising at said subscriber stations, software controlled

facilities for recording a video program for private
viewing distributed by said program center for a single
video reproduction at an authorized subscriber viewing
station.

11. The interactive network of claim 7, wherein said
subscriber stations further comprise software controlled
facilities for implementing and paying for a private
viewing of a video program for distribution over said
satellite network from said program processing center.

12. The interactive network of claim 11 further com-
prising,

encryption means at said program processing center
for uniquely encrypting different individual video
programs designated for private viewing with a
randomly generated encryption key, and

processing means at said interactive network process-
ing center for controlling a transaction and deliver-
ing a decryption key obtained from the program
processing center to an authorized subscriber sta-
tion for receipt of the encrypted video program.

13. The method of releasing video programs from a
video storage and distribution center for private view-
ing of a subscriber, comprising the steps of:

transmitting for private viewing from said distribu-
tion center over a satellite broadcast channel en-
crypted video programs having unique encryption
keys for each private viewing, and

transmitting from the distribution center over a wire-
less two way interactive network channel coupled
with an authorized subscriber station the unique
key for decrypting the broadcast video program
together with order confirmation data.

14. The method of claim 13 further comprising the
step of

processing over the interactive network channel cata-
log menu data for subscriber selection of video
programs available for private viewing.

15. The method of claim 13 further comprising the
steps of

accepting orders for a shared cost private viewing of
a video program from a set of subscribers over said
interactive network channel by said distribution
center, and

transmitting to each of the subscribers in said set over
said interactive network channel the unique key for
decrypting the shared cost private viewing video
program.

*   *   *   *   *

EXHIBIT G

2202

A-19638   PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of   RECEIVED

Norton Garfinkle   AUG 1 0 1994

Serial No. 08/072,927   Group Art Unit 2202

Filed: June 7, 1993   Examiner D. Cain

For: SYSTEM FOR LIMITING USE OF
      DOWN-LOADED VIDEO-ON-DEMAND DATA

AMENDMENT

Commissioner of Patents and Trademarks
Washington, D.C. 20231

Sir:

    In response to the Office Action dated May 6, 1994, please

amend the above-identified patent application as follows:

In the Claims:

    Cancel claims 1-8 and substitute therefor the following

claims:

    8.   (New)   A method for providing a video product from a

central station to a user site, comprising the steps of:

          transmitting from said central station to said user site

a digital data stream comprising said video product, and data

establishing a limit for authorized viewing of said video product;

          storing said video product at said user site;

decoding said data establishing a limit for authorized viewing of said video product;

storing a result of said decoding step;

blocking access to said video product stored at said user site if said limit for authorized viewing is exceeded.

2 10. (New) A method for providing a video product from a central station to a user site, comprising the steps of:

transmitting from said central station to said user site a digital data stream comprising said video product, data establishing a time period during which viewing of said video product is authorized;

storing said video product at said user site;

decoding said data establishing a time period during which viewing of said video product is authorized;

storing a result of said decoding step;

comparing an output of a local clock signal generator with said result of said decoding step;

erasing said video product stored at said user site if the result of said comparing step is that the time period during which viewing of said video product is authorized has expired.

3 11. (New) A method for providing a video product from a central station to a user site, comprising the steps of:

transmitting from said central station to said user site a digital data stream comprising said video product, data

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establishing a time period during which viewing of said video
product is authorized, and time of day clock synchronizing data;

storing said video product at said user site;

decoding said data establishing a time period during
which viewing of said video product is authorized;

storing a result of said decoding step;

comparing an output of said local clock time of day
signal generator with said result of said decoding step;

erasing said video product stored at said user site if
the result of said comparing step is that the time period during
which viewing of said video product is authorized has expired.

REMARKS

Claims 1-8 have been canceled and claims 9-11 have been
substituted therefor in order to point out applicant's invention
with greater particularity. Reconsideration is respectfully
requested in view of these amendments and the following remarks.

Applicant's invention relates to a video-on-demand system in
which the video product ordered by a user is down-loaded as a
digital data stream to the ordering user's site, where it is stored
for viewing in response to a local request by the user. In
accordance with applicant's invention, the user's access to the
video product stored at the user site is limited in accordance with
data that is transferred concomitantly as part of the down-loaded

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digital data stream. Specifically, in accordance with applicant's
preferred embodiment, the down-loaded data stream includes data
which establishes a period of time during which the user is
authorized to view the stored video product. This data is decoded,
stored, and compared with the output of a local clock signal
generator. When the comparison indicates that the authorized time
period has expired, user access to the stored video product is
denied; preferably the stored video product is erased.

The Hyatt reference relied upon by the Examiner in rejecting
applicant's claims relates to a card with two magnetic stripes
encoded with data for establishing periods in which a user is
authorized to view broadcast TV programs. The data encoded in the
magnetic stripes is erased after the card has been used in order to
prevent reuse of the card.

The Hyatt reference does not teach or suggest storing video
products at a user site. Moreover, in Hyatt, the data which
establishes a period in which a user can receive broadcast TV
programs is encoded in a magnetic stripe on a card. The card is
purchased by the user with the data already encoded. The card is
physically delivered to the user, presumably by messenger or mail.

The Morales reference also relied upon by the Examiner in
rejecting applicant's claims relates to a shared-price custom video
rental system via an interactive satellite network. Primarily the
Morales system appears to be aimed at distributing video programs
from a central station in an encrypted format over a satellite
channel for the viewing of one or a small group of subscribers.

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Morales does suggest storing the video program at a subscriber station for a single private viewing at a time chosen by a subscriber. Special purpose, single shot, local control software is down-loaded to the ordering subscriber to implement a private decrypted viewing session of the video program. The software self-destructs after a single viewing.

Here it should be noted that the only mechanism for limiting viewer access to the stored video program taught or suggested by Morales is the single shot, special purpose, local control software that decrypts the stored video program. There is no teaching or suggestion in Morales of establishing an authorized period in which the stored material can be viewed or in transmitting the authorizing data as a part of the down-loaded video data stream.

The Examiner has attempted to combine the teachings of Hyatt and Morales. Applicant respectfully submits that, when the teachings of Hyatt and Morales are respectively viewed as a whole, as they must be, such a combination would not result in an anticipation of applicant's claimed invention.

If one were to combine the two references, following their teachings as a whole, one would provide the card of Hyatt to users of the Morales system One would only reconstruct the Morales system in the manner proposed by the Examiner if one proceeded in the same manner as the Examiner. What the Examiner has done, applicant respectfully submits, is to ascertain what applicant did and then view the prior art in such a manner as to select random facts of that prior art that may be modified and then utilized to
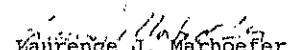
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reconstruct applicant's invention.   This of course is impermissible.   See In re Shuman and Meinhardt, 150 U.S.P.Q. 54.

Specifically applicant respectfully submits that presently pending claims 9, 10 and 11 define applicant's invention over the references of record either alone or in combination.   Independent claims 9, 10 and 11 specifically point out that time limiting data is transferred to the user site as part of the down-loaded data stream that includes the video product.   Neither of the references of record teach or suggest down-loading the limiting data as part of the video data stream.   Hyatt does not teach down-loading such data at all.   Morales teaches down-loading a single shot program to decode the data but does not teach or suggest the use of time limiting data (claims 10 and 11) or that limiting data should be down-loaded as part of the video data stream.   As pointed out above, any attempt to combine Hyatt and Morales to meet applicant's invention as particularly pointed out in claims 9, 10 and 11 would be improper as it would be contrary to their respective teachings as a whole.

Claim 11 further particularly points out that synchronizing data is also down-loaded to synchronize the local clock generator. Obviously, neither Hyatt nor Morales either alone or in combination teach this aspect of applicant's invention as particularly pointed out in this claim.

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Applicants respectfully submit that the application is in condition for allowance and a notice to this effect is respectfully solicited.

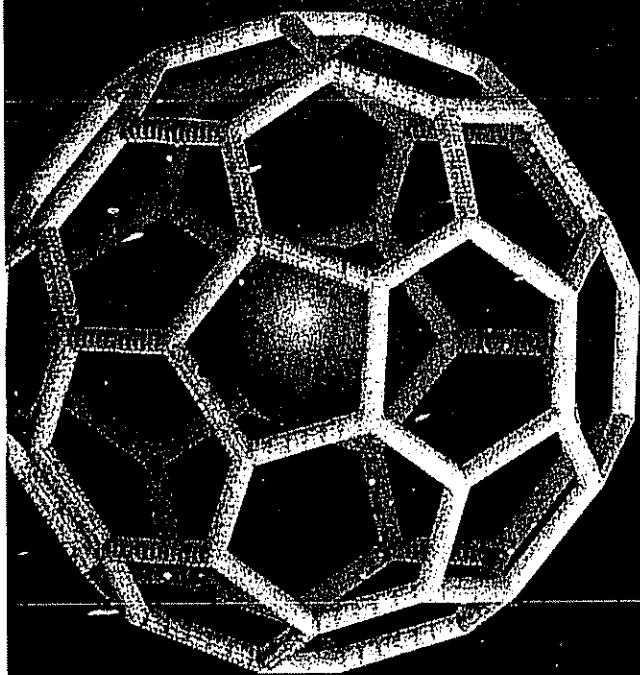Respectfully submitted,

Laurence J. Marhoefer
Reg. No. 21,091

Date: *August 5 1994*

Lane, Aitken & McCann
2600 Virginia Ave., N.W.
Washington, D.C. 20037
(202) 337-5556

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EXHIBIT H

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On the cover: Representation of a fullerene molecule with a noble gas atom trapped inside. At the Permian-Triassic sedimentary boundary the noble gases helium and argon have been found trapped inside fullerenes. They exhibit isotope ratios quite similar to those found in meterorites, suggesting that a fireball meteorite or asteroid exploded when it hit the Earth, causing major changes in the environment. *(Image copyright © Dr. Luann Becker. Reproduced with permission.)*

Over the six editions of the Dictionary, material has been drawn from the following references: G. M. Garrity et al., *Taxonomic Outline of the Procaryotes*, Release 2, Springer-Verlag, January 2002; D. W. Linzey, *Vertebrate Biology*, McGraw-Hill, 2001; J. A. Pechenik, *Biology of the Invertebrates*, 4th ed., McGraw-Hill, 2000; *U.S. Air Force Glossary of Standardized Terms*, AF Manual 11-1, vol. 1, 1972; F. Casey, ed., *Compilation of Terms in Information Sciences Technology*, Federal Council for Science and Technology, 1970; *Communications-Electronics Terminology*, AF Manual 11-1, vol. 3, 1970; P. W. Thrush, comp. and ed., *A Dictionary of Mining, Mineral, and Related Terms*, Bureau of Mines, 1968; *A DOD Glossary of Mapping, Charting and Geodetic Terms*, Department of Defense, 1967; J. M. Gilliland, *Solar-Terrestrial Physics: A Glossary of Terms and Abbreviations*, Royal Aircraft Establishment Technical Report 67158, 1967; W. H. Allen, ed., *Dictionary of Technical Terms for Aerospace Use*, National Aeronautics and Space Administration, 1965; *Glossary of Stinfo Terminology*, Office of Aerospace Research, U.S. Air Force, 1963; *Naval Dictionary of Electronic, Technical, and Imperative Terms*, Bureau of Naval Personnel, 1962; R. E. Huschke, *Glossary of Meteorology*, American Meteorological Society, 1959; *ADP Glossary*, Department of the Navy, NAVSO P-3097; *Glossary of Air Traffic Control Terms*, Federal Aviation Agency; *A Glossary of Range Terminology, White Sands Missile Range, New Mexico*, National Bureau of Standards, AD 467-424; *Nuclear Terms: A Glossary*, 2d ed., Atomic Energy Commission.

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in a form that can be read by a machine. { 'dad·ə ə,rij·ə'nā·shən }

data patch panel [COMMUN] A plugboard used to rearrange communications lines and modems by connecting them with double-ended cables, or to attach monitoring devices to analyze circuit signals. { 'dad·ə 'pach ,pan·əl }

data plotter [COMPUT SCI] A device which plots digital information in a continuous fashion. { 'dad·ə ,pläd·ər }

data processing [COMPUT SCI] Any operation or combination of operations on data, including everything that happens to data from the time they are observed or collected to the time they are destroyed. Also known as information processing. { 'dad·ə 'präs,es·iŋ }

data processing center [COMPUT SCI] A computer installation providing data processing service for others, sometimes called customers, on a reimbursable or nonreimbursable basis. { 'dad·ə |präs,es·iŋ ,sent·ər }

data processing inventory [COMPUT SCI] An identification of all major data processing areas in an agency for the purpose of selecting and focusing upon those in which the use of automatic data processing (ADP) techniques appears to be potentially advantageous, establishing relative priorities and schedules for embarking on ADP studies, and identifying significant relationships among areas to pinpoint possibilities for the integration of systems. { 'dad·ə |präs,es·iŋ ,in·vən,tör·ē }

data processor [COMPUT SCI] 1. Any device capable of performing operations on data, for instance, a desk calculator, an analog computer, or a digital computer. 2. Person engaged in processing data. { 'dad·ə 'präs,es·ər }

data protection [COMPUT SCI] The safeguarding of data against unauthorized access or accidental or deliberate loss or damage. { 'dad·ə prə,tek·shən }

data purification [COMPUT SCI] The process of removing as many inaccurate or incorrect items as possible from a mass of data before automatic data processing is begun. { 'dad·ə pyür·ə fə'kā·shən }

data rate [COMMUN] The number of digital bits per second that are recorded or retrieved from a data storage device during the transfer of a large data block. { 'dad·ə ,rāt }

data record [COMPUT SCI] A collection of data items related in some fashion and usually contiguous in location. { 'dad·ə ,rek·ord }

data recorder [COMPUT SCI] A keyboard device for entering data onto magnetic tape. { 'dad·ə ri,kör·dər }

data reduction [COMPUT SCI] The transformation of raw data into a more useful form. [STAT] The conversion of all information in a data set into fewer dimensions for a particular purpose, as, for example, a single measure such as a reliability measure. { 'dad·ə ri,dək·shən }

data reduction system See data-handling system. { ,dad·ə ri,dək·shən ,sis·təm }

data redundancy [COMPUT SCI] The occurrence of values for data elements more than once within a file or database. { 'dad·ə ri,dən·dən·sē }

data register [COMPUT SCI] A register used in microcomputers to temporarily store data being transmitted to or from a peripheral device. { 'dad·ə ,rej·ə·stər }

data representation [COMPUT SCI] 1. The way that the physical properties of a medium are used to represent data. 2. The manner in which data is expressed symbolically by binary digits in a computer. { 'dad·ə ,rep·ri·zen'tā·shən }

data retrieval [COMPUT SCI] The searching, selecting, and retrieving of actual data from a personnel file, data bank, or other file. { 'dad·ə ri'trē·vəl }

data rules [COMPUT SCI] Conditions which must be met by data to be processed by a computer program. { 'dad·ə ,rülz }

data scope [ELECTR] An electronic display that shows the content of the information being transmitted over a communications channel. { 'dad·ə ,skōp }

data security [COMPUT SCI] The protection of data against the deliberate or accidental access of unauthorized persons. Also known as file security. { 'dad·ə sə,kyür·əd·ē }

data set [COMPUT SCI] 1. A named collection of similar and related data records recorded upon some computer-readable medium. 2. A data file in IBM 360 terminology. { 'dad·ə,set }

data set coupler [COMPUT SCI] The interface between a parallel computer input/output bus and the serial input/output of a modem. { 'dad·ə ,set ,kəp·lər }

data set label [COMPUT SCI] A data element that describes a data set, and usually includes the name of the data set, its boundaries in physical storage, and certain characteristics of data items within the set. { 'dad·ə ,set ,lā·bəl }

data set migration [COMPUT SCI] The process of moving inactive data sets from on-line storage to back up storage in a time-sharing environment. { 'dad·ə ,set mī,grā·shən }

data set organization See data organization. { 'dad·ə ,set ,ör·gə·nə,zā·shən }

data sink [COMPUT SCI] A memory or recording device capable of accepting data signals from a data transmission device and storing data for future use. { 'dad·ə , siŋk }

data source [COMPUT SCI] A device capable of originating data signals for a data transmission device. { 'dad·ə ,sörs }

data stabilization [ELECTR] Stabilization of the display of radar signals with respect to a selected reference, regardless of changes in radar-carrying vehicle attitude, as in azimuth-stabilized plan-position indicator. { 'dad·ə ,stā·bə lə,zā·shən }

data statement [COMPUT SCI] An instruction in a source program that identifies an item of data in the program and specifies its format. { 'dad·ə ,stāt·mənt }

data station [COMPUT SCI] A remote input/output device which handles a variety of transmissions to and from certain centralized computers. { 'dad·ə ,stā·shən }

data station control [COMPUT SCI] The supervision of a data station by means of a program resident in the central computer. { 'dad·ə ,stā·shən kən,trōl }

data stream [COMMUN] The continuous transmission of data from one location to another. { 'dad·ə ,strēm }

data striping See disk striping. { 'dad·ə ,strīp·iŋ }

data structure [COMPUT SCI] A collection of data components that are constructed in a regular and characteristic way. { 'dad·ə ,strək·chər }

data switch [COMPUT SCI] A manual or automatic device that connects data-processing machines to one another. { 'dad·ə ,swich }

data system [COMPUT SCI] The means, either manual or automatic, of converting data into action or decision information, including the forms, procedures, and processes which together provide an organized and interrelated means of recording, communicating, processing, and presenting information relative to a definable function or activity. { 'dad·ə ,sis·təm }

data system interface [COMPUT SCI] 1. A common aspect of two or more data systems involving the capability of intersystem communications. 2. A common boundary between automatic data-processing systems or parts of a single system. { 'dad·ə |sis·təm 'in·tər,fās }

data systems integration [COMPUT SCI] Achievement through systems design of an improved or broader capability by functionally or technically relating two or more data systems, or by incorporating a portion of the functional or technical elements of one data system into another. { 'dad·ə ,sis·təmz ,in·tə,grā·shən }

data system specifications [COMPUT SCI] 1. The delineation of the objectives which a data system is intended to accomplish. 2. The data processing requirements underlying that accomplishment; includes a description of the data output, the data files and record content, the volume of data, the processing frequencies, training, and such other facts as may be necessary to provide a full description of the system. { 'dad·ə ,sis·təm ,spes·ə·fə,kā·shən }

data table [COMPUT SCI] An on-screen display of the information in a database management system, presented in columnar format, with field names at the top. { 'dad·ə ,tā·bəl }

data tablet See electronic tablet. { 'dad·ə ,tab·lət }

data tracks [COMPUT SCI] Information storage positions on drum storage devices; information is stored on the drum surface in the form of magnetized or nonmagnetized areas. { 'dad·ə ,traks }

data transcription equipment [COMPUT SCI] Those devices or equipment designed to convey data from its original state to a data processing media. { |dad·ə tranz,krip·shən i,kwip·mənt }

data transfer [COMPUT SCI] The technique used by the hardware manufacturer to transmit data from computer to storage device or from storage device to computer; usually under specialized program control. { 'dad·ə 'tranz·fər }

transmission-line reflection coefficient [ELEC] The ratio of the voltage reflected from the load at the end of a transmission line to the direct voltage { tranz'mish·ən ¦līn ri'flek·shən ‚kō-i‚fish·ənt }

transmission-line theory [ELEC] The application of electrical and electromagnetic theory to the behavior of transmission lines { tranz'mish·ən ¦līn ‚thē·ə·rē }

transmission-line transducer loss [ELEC] The ratio of the power delivered by a transmission line to a load to that produced at the generator, expressed in decibels; equal to the sum of the attenuation of the line and the mismatch loss { tranz'mish·ən ¦līn trans'dü·sər‚lòs }

transmission-line voltage [ELEC] The work that would be required to transport a unit electrical charge between two specified conductors of a transmission line at a given instant { tranz'mish·ən ¦līn ‚vōl·tij }

transmission loss [COMMUN] 1. The ratio of the power at one point in a transmission system to the power at a point farther along the line; usually expressed in decibels. 2. The actual power that is lost in transmitting a signal from one point to another through a medium or along a line. Also known as loss. { tranz'mish·ən ‚lòs }

transmission mode See mode. { tranz'mish·ən ‚mōd }

transmission modulation [ELECTR] Amplitude modulation of the reading-beam current in a charge storage tube as the beam passes through apertures in the storage surface; the degree of modulation is controlled by the stored charge pattern. { tranz'mish·ən ‚mäj·ə'lā·shən }

transmission oil [MATER] A lubricant especially compounded for automobile transmissions { tranz'mish·ən ‚òil }

transmission plane [OPTICS] The plane of vibration of polarized light that will pass through a Nicol prism or other polarizer. { tranz'mish·ən ‚plān }

transmission primaries [COMMUN] The set of three color primaries that correspond to the three independent signals contained in the color television picture signal. { tranz'mish·ən 'prī‚mer·ēz }

transmission range See night visual range. { tranz'mish·ən ‚rānj }

transmission regulator [ELECTR] In electrical communications, a device that maintains substantially constant transmission levels over a system. { tranz'mish·ən ‚reg·yə‚lād·ər }

transmission security [COMMUN] Component of communications security which results from all measures designed to protect transmissions from unauthorized interception, traffic analysis, and imitative deception { tranz'mish·ən si‚kyùr·əd·ē }

transmission speed [COMMUN] The number of information elements sent per unit time; usually expressed as bits, characters, bands, word groups, or records per second or per minute { tranz'mish·ən ‚spēd }

transmission substation [ELEC] An electric power substation associated with high voltage levels. { tranz'mish·ən 'səb‚stā·shən }

transmission time [COMMUN] Absolute time interval from transmission to reception of a signal { tranz'mish·ən ‚tīm }

transmission tower [ENG] A concrete, metal, or timber structure used to carry a transmission line { tranz'mish·ən ‚taù·ər }

transmissivity [ELECTROMAG] The ratio of the transmitted radiation to the radiation arriving perpendicular to the boundary between two mediums { ‚tranz·mə'siv·əd·ē }

transmissometer [ENG] An instrument for measuring the extinction coefficient of the atmosphere and for the determination of visual range. Also known as hazemeter; transmittance meter { ‚tranz·mə'säm·əd·ər }

transmissometry [OPTICS] The technique of determining the extinction characteristics of a medium by measuring the transmission of a light beam of known initial intensity directed into that medium { ‚tranz·mə'säm·ə·trē }

transmit [COMMUN] To send a message, program, or other information to a person or place by wire, radio, or other means. [COMPUT SCI] To move data from one location to another { tranz'mit }

transmittability [COMMUN] The ability of standard electronic and mechanical elements and automatic communications equipment to handle a code under various signal-to-noise ratios; for example, a code with a variable number of elements such

as Morse presents technical problems in automatic interpretation not encountered in a fixed-length code { tranz‚mid·ə'bil·əd·ē }

transmittance [ANALY CHEM] During absorption spectroscopy, the amount of radiant energy transmitted by the solution under analysis. [ELECTROMAG] The radiant power transmitted by a body divided by the total radiant power incident upon the body. Also known as transmission. { tranz'mid·əns }

transmittance meter See transmissometer. { tranz'mid·əns ‚mēd·ər }

transmittancy [ELECTROMAG] The transmittance of a solution divided by that of the pure solvent of the same thickness { tranz'mid·ən·sē }

transmitted-carrier operation [COMMUN] Form of amplitude-modulated carrier transmission in which the carrier wave is transmitted. { tranz'mid·əd ¦kar·ē·ər ‚äp·ə‚rā·shən }

transmitted wave See refracted wave. { tranz'mid·əd 'wāv }

transmitter [COMMUN] 1. In telephony, the carbon microphone that converts sound waves into audio-frequency signals 2. See radio transmitter. [ELEC] See synchro transmitter { tranz'mid·ər }

transmitter-distributor [ELEC] In teletypewriter operations, a motor-driven device which translates teletypewriter code combinations form perforated tape into electrical impulses, and transmits these impulses to one or more receiving stations Abbreviated TD. { tranz'mid·ər di'strib·yəd·ər }

transmitter noise See frying noise. { tranz'mid·ər ‚nòiz }

transmitter off [COMMUN] A signal sent by a receiving device to a transmitter, directing it to stop sending information if it is doing so, or not to send information if it is preparing to do so. Abbreviated XOFF. { tranz'mid·ər 'òf }

transmitter on [COMMUN] A signal sent by a receiving device to a transmitter, directing it to transmit any information it has to send Abbreviated XON { tranz'mid·ər 'òn }

transmitter-receiver See transceiver. { tranz'mid·ər ri'sē·vər }

transmitter synchro See synchro transmitter. { tranz'mid·ər ‚siŋ·krō }

transmitting loop loss [COMMUN] That part of the repetition equivalent assignable to the station set, subscriber line, and battery supply circuit which is on the transmitting end { tranz'mid·iŋ ¦lüp ‚lòs }

transmitting mode [COMPUT SCI] Condition of an input/output device, such as a magnetic tape when it is actually reading or writing { tranz'mid·iŋ ‚mōd }

transmittivity [ELECTROMAG] The internal transmittance of a piece of nondiffusing substance of unit thickness { ‚tranz·mə'tiv·əd·ē }

TRANS modeling [FL MECH] A type of turbulence modeling which is based on solving the Reynolds-averaged Navier-Stokes equations in a time-dependent mode Derived from transient RANS modeling. { 'tranz ‚mäd·əl·iŋ or 'tē‚ranz }

transmutation [NUC PHYS] A nuclear process in which one nuclide is transformed into the nuclide of a different element. Also known as nuclear transformation { ‚tranz myü'tā·shən }

transobuoy [ENG] A free-floating or moored automatic weather station developed for the purpose of providing weather reports from the open oceans; it transmits barometric pressure, air temperature, sea-water temperature, and wind speed and direction { 'tran·sə‚bòi }

transolver [ELEC] A synchro having a two-phase cylindrical rotor within a three-phase stator, for use as a transmitter or a control transformer with no degradation of accuracy or nulls. { tran'säl·vər }

transom [BUILD] A window above a door. [NAV ARCH] The flat, vertical aft end of a ship or boat as distinguished from a canoe-shaped or cruiser stern. { 'tran·səm }

transonic [PHYS] That which occurs or is occurring within the range of speed in which flow patterns change from subsonic to supersonic (or vice versa), about Mach 0.8 to 1.2, as in transonic flight or transonic flutter. { tran'sän·ik }

transonic flight [AERO ENG] Flight of vehicles at speeds near the speed of sound (660 miles per hour or 1060 kilometers per hour, at 35,000 feet or 10,700 meters altitude), characterized by great increase in drag, decrease in lift at any altitude; and abrupt changes in the moments acting on the aircraft; the vehicle may shake or buffet { tran'sän·ik 'flīt }

transonic flow [FL MECH] Flow of a fluid over a body in